
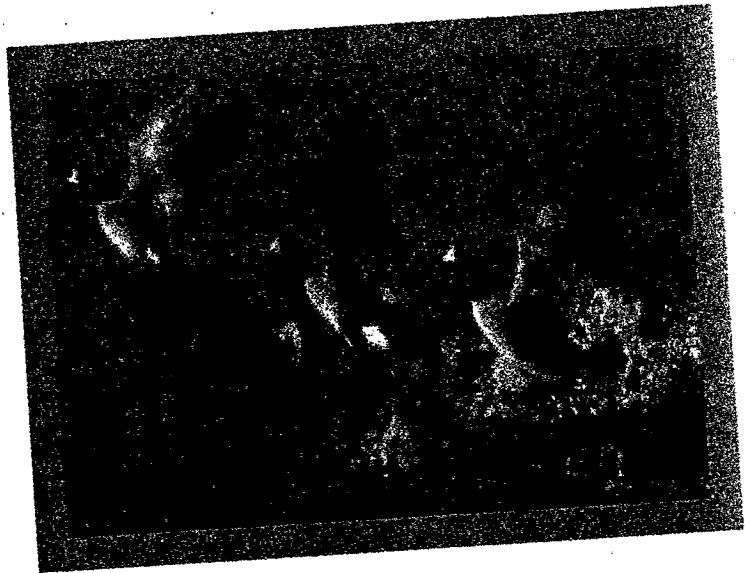


# Programs Related to Improving and Protecting the Bay-Delta System

 CALFED  
BAY-DELTA  
PROGRAM



**DRAFT**

**July 1996**

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## INTRODUCTION

The CALFED Bay-Delta Program (Program) is developing an integrated plan and implementation strategy to improve conditions in the San Francisco Bay-Delta Estuary. This Program is a joint effort among State and Federal agencies with management and regulatory responsibilities in the Bay-Delta. In addition, the Program involves significant public and Stakeholder involvement. CALFED members include many lead agencies found in this document. They will help coordinate restoration, protection, and enhancement activities. The CALFED process will likely identify new programs and initiatives throughout the Program's phases.

CALFED's current efforts aim to accomplish specific objectives for Water Supply, Water Quality, System Vulnerability, and Ecosystem Quality. CALFED is currently in Phase I, Program alternative selection. These alternatives will be assessed in a programmatic EIS/EIR during Phase II. Phase III will be Project specific environmental documentation review and permitting.

This document lists existing programs related to the Delta. Recognizing these related programs will assist CALFED to:

- identify programs that correlate with CALFED goals and objectives;
- coordinate related programs;
- assist related programs;
- avoid duplicate efforts.

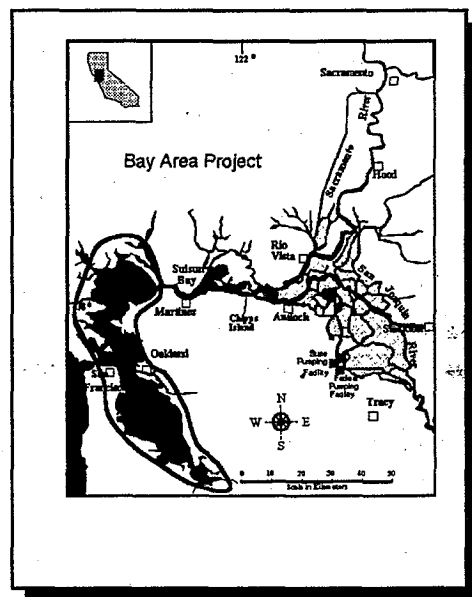
These program descriptions cannot be considered comprehensive; they were kept brief by necessity. If more detailed information is required contact names, telephone numbers, and Internet addresses are provided. New programs identified by CALFED will be noted and included in updated lists. The appendices contain matrixes that relate CALFED actions to the related programs (Appendix A) and funding to the related programs (Appendix B).

This list does not include specific references to the many on-going agency efforts in the Estuary with similar objectives. Many specific projects listed in Appendix B are being funded by broader programs describe in this document and therefore are not described individually. These agencies' efforts are substantial and crucial to CALFED's success. The fact that these programs are not specifically listed here does not diminish the importance of their role.

## ECOSYSTEM QUALITY

### Bay Area Wetlands Planning Group (BAWPG):

The BAWPG's objective is to create a management plan for wetlands and water resources in the Bay Area. BAWPG will use this management plan to coordinate State and Federal agencies that have jurisdiction in the Bay Area. BAWPG hopes to create an inventory of Bay Area wetlands and their associated habitat values; identify scientifically justifiable wetland habitat goals for the Bay Area and attempt to negotiate an interagency MOU. The MOU will coordinate the involved agencies to implement the wetlands goals. The Resources Agency is the lead agency. Many agencies are participating in this program: BCDC, COE, SFBRWQCB, SWRCB, USEPA, DFG, USFWS, SFEI, Cal/EPA, CALFED, Bay Area Joint Venture.



Geographic Scope: Bay Area

Funding: Funding comes from the State of California and the USEPA. Approximately \$80,000 is available for the 95/96 fiscal year.

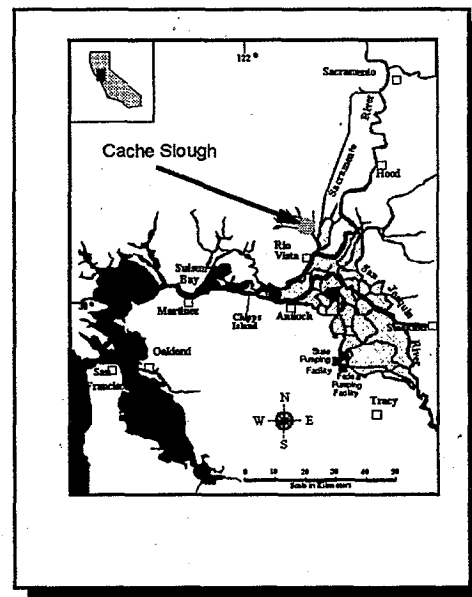
Continuing/Sunset Date: N/A

Contact: Craig Denisoff, Resources Agency (916) 654-2753

**Cache Creek Corridor Restoration Plan:** The COE is addressing the severe wildlife habitat degradation along Cache Creek. This investigation will evaluate gravel pit restoration, permanent and seasonal wetland creation and riparian revegetation. These measures will be integrated into floodplain management measures, such as flow easements.

Geographic Scope: Thirty miles of Cache Creek upstream from the Yolo Bypass settling basin.

Funding: The Plan will cost \$4,800,000. The non-federal share of implementing the feasibility study phase is \$750,000 (one half of which may be in-kind work). Site specific restoration plans identified along Cache Creek could be considered for implementation by COE, which



would require 25 percent non-federal funding. The COE has provided \$170,000 for the 1996 FY. \$114,000 was provided by the EPA/Central Valley Regional Water Quality Control Board for FY95. Category III funding is being sought for this next phase of study. A letter of intent to participate in the feasibility study phase will be needed by the end of the reconnaissance study in early 1996.

Continuing/Sunset Date: Continuing project depends on funding.

Contact: Rick Dreher, COE (916)557-6769

**California-Oregon Transmission Project (COTP)**

**Waterfowl Mitigation Plan:** Construction of the California-Oregon Transmission Project impacted Delta waterfowl. Impacts were offset with acquisitions and management of approximately 1,200 acres on the eastern half of Palm Tract by the Transmission Agency of Northern California. A habitat management plan developed in consultation with USFWS and DFG staff is currently being implemented. The Plan's goal is to offset bird mortality by enhancing nesting on Palm Tract and offsetting habitat losses by optimizing wintering habitat.

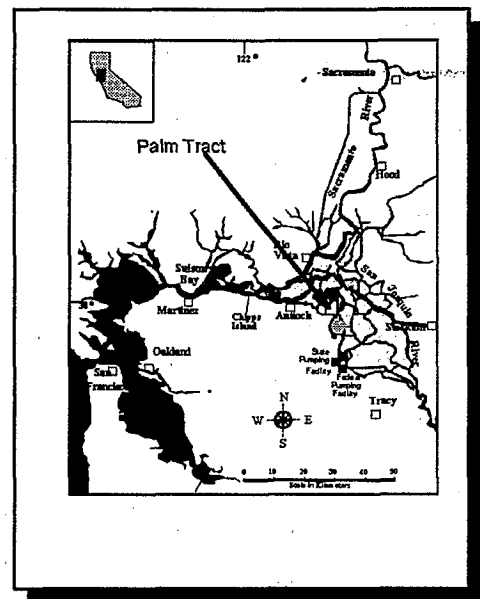
Geographic Scope: 1,200 acres on the eastern half of Palm Tract in the Sacramento-San Joaquin Delta

Funding: Approximately \$2 million were used to purchase and install the avoidance measures at appropriate locations on the new transmission line on Palm Tract. Currently the Transmission Agency of Northern California expends approximately \$9,200 annually to operate and maintain the mitigation site on Palm Tract. Future expenditures are expected to continue subject to inflationary increases.

Continuing/Sunset Date: This program is expected to continue unless the electrical transmission lines originally requiring mitigation are removed.

Contact: Frank Wernette, DFG (209) 948-7800

**California Waterfowl Association (CWA):** CWA was founded in 1945 by concerned duck hunters in order to protect California's waterfowl, wetlands, and outdoor heritage. Species specific Waterfowl Programs seek healthy and abundant waterfowl populations which result in





increased recreational values. Other programs range from providing nest structures for ducks and geese, to financial support for regional wetland enhancement projects. Focusing on waterfowl species that breed in California, these programs identify essential habitat requirements that limit population growth. CWA staff communicate habitat improvement methods to landowners and managers, evaluate habitat projects, and administer incentive programs.

**Geographic Scope:** Statewide

**Funding:** Historical and current funding comes from private donations and contracts.

**Continuing/Sunset Date:** This program is expected to continue.

**Contact:** Richard Shinn, CWA (916) 648-1406

**California Wetland Riparian Geographic Information System Project:** The goal of this project is to develop a Wetland and Riparian GIS database for the Sacramento and northern San Joaquin valleys and the Bay-Delta. Initial categories will be agriculture, wetlands, and uplands. Efforts are being conducted in Areas (below) 1,2, and 3 by the DFG and Area 4 by USBR.

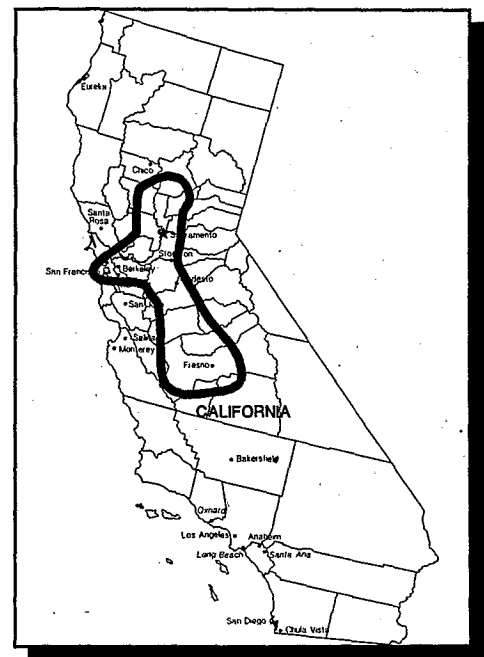
**Geographic Scope:** Four Areas: 1) North Sacramento Valley; 2) Central Sacramento Valley and Bay; 3) North San Joaquin Valley; 4) tip of the Northern and Southern Central Valley.

**Funding:** USEPA grant to the DFG; Wildlife Conservation Board; and Resources Agency.

**Continuing/Sunset Date:** Continuing

**Contact:** Kari Lewis, DFG, (916) 322-1869

**Category III Program:** Pursuant to the December 1994 Principles for Agreement on Bay-Delta Standards between the State of California and the Federal Government, the state and Federal governments and agricultural, urban and environmental interests are committed to the implementation and financing of "Category III" measures as essential part of a comprehensive ecosystem protection plan for the Bay-Delta Estuary. The Category III effort was meant to address



non-flow factors that affect the health of the Bay-Delta ecosystem.

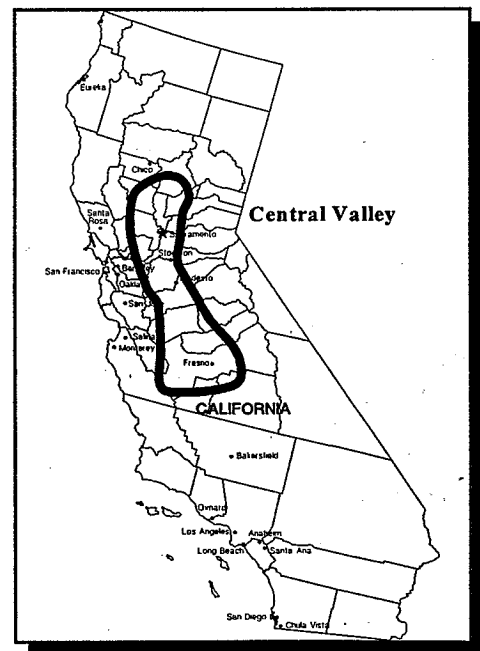
**Geographic Scope:** Areas upstream, downstream and within the Bay-Delta Estuary.

**Funding:** Level of funding for Category III activities are expected to require a financial commitment estimated to be \$60 million a year. It is anticipated that new sources of funds will be required to adequately finance Category III activities. A process for evaluating existing funding and possible reprioritization will be used to finance a portion of Category III activities. Additional funds will be secured through a combination of Federal and State appropriations, user fees, and other sources as required. The Category III Steering Committee is working with stakeholders and CALFED in an open process to determine precise priorities and financial commitments for the implementation of all Category III elements. Contributions are currently limited to Metropolitan Water District has made \$30 million available and CUWA is administering the funds. Four million of this is committed to nine approved projects: Battle Creek Restoration; Butte Creek-Durham Mutual Dam Fish Ladder and Screen; Butte Creek-Parrot-Phelan Dam Fish Ladder; Keswick Dam Gravel Restoration; Big Chico Creek - Parrot-Phelan Fish Screen & Pump Relocation; BIOS Pollution Control, Madera, San Joaquin, and Colusa counties; Sacramento River Restoration Colusa to Verona; Suisun Marsh Fish Screens; and Winter-run Captive Broodstock Program. No specific additional funds are pledged at this time.

**Continuing/Sunset Date:** Category III is currently under a three year contract, however this program is anticipated to continue beyond that term.

**Contact:** Steve Hirsch (916) 650-2622. Information regarding the Category III Program may be accessed through the Bay-Delta Home Page <http://www.delta.dfg.ca.gov>

**Central Valley Habitat Joint Venture (Venture):** The Venture was created to implement the North American Waterfowl Management Plan (NAWMP). In the NAWMP, agencies and private organizations collectively pool their resources to solve waterfowl habitat problems. The goal is to protect, maintain, and restore habitat to increase waterfowl populations in the Central Valley and the Delta, specifically through the coordination of habitat acquisition and management. The Venture aspires above the no net loss concept to create a net gain in Central Valley wetland habitat. Wetland enhancement includes management actions (supplemental funding, construction, or technical assistance) that promote: wetland availability; desirable plant and invertebrate communities; optimal foraging depths for a variety of waterfowl species; desirable spatial patterns of wetland vegetation and wetland types; and disease control efforts. The joint



venture will coordinate habitat acquisition within agencies to maximize habitat benefits for wildlife. The Habitat Protection Objective is to protect 80,000 acres in the Central Valley. From the 80,000 acres, the acquisition objective will protect 3,000 acres of wetland habitat; restore and protect 19,500 acres of wetlands; enhance 3,500 acres of State lands, 5,850 acres of private lands, 1,100 acres of federal lands, and 46,000 acres of private lands in the Suisun Marsh; and 63,392 acres of agricultural land in the Delta.

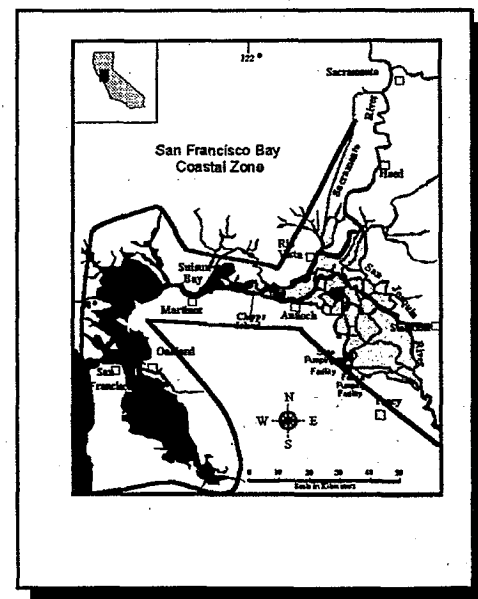
**Geographic Scope:** Central Valley and the Delta

**Funding:** The habitat protection objective for the Delta is estimated at \$9.0 million to acquire 2,300 acres through fee title, \$0.7 million to acquire 700 acres through conservation easements. The majority of the State's funding for restoration programs will come from the following sources: California State Duck Stamp funds, California Wildlife Restoration Fund, California Endangered Species License Plate Fund, Ducks Unlimited MARSH funds, Federal Aid in Wildlife Restoration (Pittman-Robertson Act), private donations, cigarette taxes (Proposition 99), and California general ballot measures. Federal funding will be provided by the Land and Water Conservation Fund, the Migratory Bird Conservation Account (duck stamps), and the North American Wetland Conservation Act. It is anticipated that new sources of funding will be developed to help implement the Joint Venture. Funds for agricultural land enhancement incentive programs come from DFG, USFWS, USDA, DU, CWA, and other private sources when appropriate. Operation and maintenance costs of restored wetlands will be borne by the private sector on those lands under conservation easements. Currently, no specific funding is available for this program. Federal, State and private agency coordinate their budget and programs to help implement the CVP Joint Venture.

**Continuing/Sunset Date:** When the primary objectives (restoration, enhancement, and protection) are met this program will be finished. Most of the objectives should be met by the year 2000.

**Contact:** Dave Pollan, USFWS (916) 979-2710

**Coastal Conservancy:** This Coastal Conservancy has jurisdiction over the San Francisco Bay, the coastal zone, and over watersheds that potentially affect the Bay. The Conservancy has the following six programs: 1) Resources Enhancement Program acquires or restores coastal habitat, including wetlands, riparian areas, and dunes; 2) Coastal Restoration Program restores developments in an environmentally-friendly manner; 3) Urban Waterfront Restoration Program restores docks, ports, wharves; 4) Agricultural Conservation Program purchases or acquires conservation easements on agricultural land to insure the land remains in agricultural production; 5) Site Reservation Program is charged with acquiring and holding land for other interested agencies or organizations until funding can be secured; and 6) Public Access



Program builds trails to and along the shoreline.

Geographic Scope: San Francisco Bay, the coastal zone, and over watersheds that potentially affect the Bay.

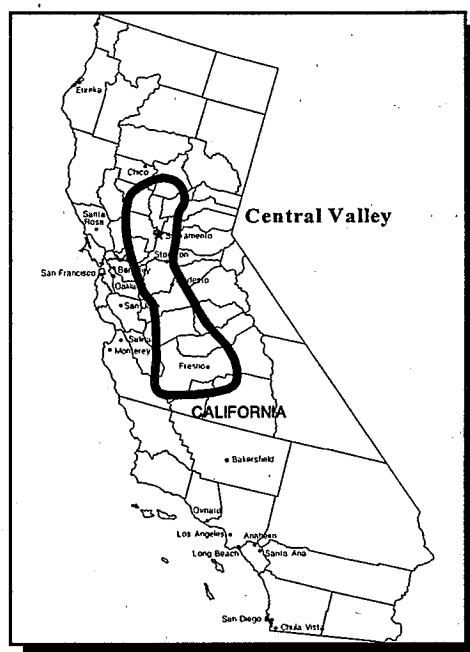
Funding: Historically, bonds were the main source of funding. Historical funding was approximately \$20 to \$25 million dollars annually. Currently, \$4 million dollars in funding comes solely from Proposition 117 (Habitat Conservation Fund). This funding should continue for the next 24 years.

Continuing/Sunset Date: Continuing

Contact: Neal Fishman, Coastal Conservancy (510) 286-1015

**Central Valley Project Improvement Act (CVPIA)**  
**Fish & Wildlife Restoration:** In 1992, President Bush signed into law the Reclamation Projects Authorization and Adjustment Act, including Title XXXIV, the CVPIA. The CVPIA amends the Department of the Interior's Central Valley Project authorization to include fish and wildlife protection, restoration, and mitigation.

The CVPIA is a joint USFWS and USBR project. The CVPIA mandated a number of activities associated with the enhancement of Central Valley fish and wildlife resources. These activities include (but are not limited to): reestablishing a natural and sustainable anadromous fishery on the San Joaquin River from Friant Dam to the Delta; doubling anadromous fisheries in all Central Valley streams and rivers by 2002; dedication of 800,000 acre-feet of CVP yield to be used for implementing fish, wildlife, and habitat restoration programs; additional mitigation of fishery impacts associated with operations of the CVP's Tracy Pumping Plant and the Contra Costa Canal Pumping Plant; installation and operation of a temperature control device at Shasta Dam; improvement of fish passage at the Red Bluff Diversion Dam and the Anderson-Cottonwood Irrigation District Diversion Dam; enhancement of the Coleman National Fish Hatchery and the Keswick Dam Fish Trap; replenishment of spawning gravel throughout the system; construction of a fish barrier at the head of Old River; a comprehensive Central Valley fish and wildlife assessment project; addressing fish losses at unscreened diversions (Anadromous Fish Screen Program); development of a Water Augmentation plan to facilitate offsetting the 800,000 AF dedicated to fish and wildlife; enhancement of ability to deliver water to refuges in the Central Valley and to firm-up those supplies; and, payments to farmers to flood their fields to serve as seasonal wetland habitat.



Geographic Scope: Central Valley

Funding: Central Valley Restoration Fund is available for deposit of donations from any source and revenues provided under sections of the Act. Up to \$50,000,000 per year are authorized to be appropriated to the Secretary to be derived from the Restoration fund to carry out programs, project, plans, and habitat restoration, improvement, and acquisition provisions of the Act. The Department of the Interior provided \$1,875,000 from the Restoration Fund for the 1996 fiscal year.

Continuing/Sunset Date: Continuing

Contact: Pat Rivera, USBR (916) 979-2326 or Jim McKevitt USFWS (916) 979-2760

**Central Valley Project Improvement Act Anadromous Fish Screen Program (AFSP):** The AFSP directs the Secretary of the Interior to assist the State of California protect juvenile anadromous fish for inadequately screened diversions. develop and implement measures to avoid juvenile anadromous fish losses resulting from unscreened or inadequately screened diversions on the Sacramento and San Joaquin rivers, their tributaries, the Sacramento-San Joaquin Delta, and the Suisun Marsh. Such measures will include but are not limited to fish screen construction, rehabilitation of existing screens, replacement of inadequate screens, and diversion relocation to less fishery-sensitive areas.



Geographic Scope: Sacramento and San Joaquin rivers, their tributaries, the Sacramento-San Joaquin Delta, and the Suisun Marsh.

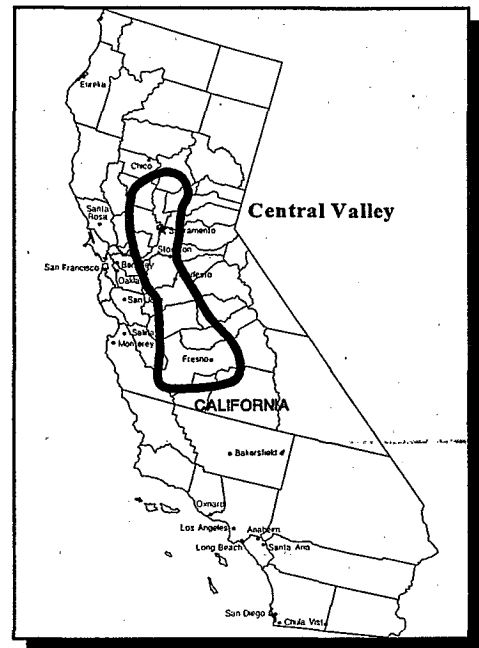
Funding: Through a cooperative effort of the Department of the Interior, USBR's Energy and Water division will provide \$7.16 million to AFSP for the 1996 fiscal year. The Secretary's share of costs associated with activities authorized will not exceed 50% of the total project cost.

Continuing/Sunset Date: Program is continuing there is no sunset date.

Contact: Ron Bachman, USFWS (916) 979-2760

**Central Valley Project Improvement Act Anadromous Fish Restoration Program (AFRP):** The AFRP directs the Secretary of the Interior to develop and implement " a program which makes all reasonable efforts to ensure that, by the year 2002, natural production of anadromous fish in Central Valley rivers and streams will be sustainable, on a long-term basis, at levels not

less than twice the average levels attained during the period of 1967-1991" (CVPIA Section 3406 (b)(1). The AFRP was developed to satisfy this directive. The AFRP will prioritize to measures that protect and restore natural channel and riparian habitats; modify Central Valley Project operations; and implement other supporting measures mandated by this subsection. The program is authorized to develop a draft plan for doubling the natural production of anadromous fish (chinook salmon, steelhead, striped bass, American shad, white and green sturgeon) in the watersheds of the Sacramento-San Joaquin Delta. A draft Anadromous Fish Restoration Plan was completed in December 1995 and the final Anadromous Fish Restoration Plan is presently underway. The Anadromous Fish Restoration Plan is the responsibility of the USFWS. The draft restoration plan provides a list of actions considered by the USFWS to be reasonable, and identifies those that are underway or likely to be implemented in 1996. A total of 176 actions and 109 evaluations are identified. Of these, 57 actions and 30 evaluations have high potential for implementation beginning in FY 1996.



**Geographic Scope:** Rivers and streams of California's Central Valley (excluding the San Joaquin River upstream to the Mendota Pool). Streams are categorized by basin, starting with the Sacramento river basin, moving to the lower Sacramento River and Delta tributaries, then to the San Joaquin basin, and finally the Delta.

**Funding:** The CVPIA established the Central Valley Project (CVP) Restoration Fund and gives the Secretary the authority to use the fund to carry out the habitat restoration improvement and acquisition (from willing sellers) provisions. The Restoration Fund, along with additional agency and other partnership funds, will support implementation of the AFRP restoration actions. Preliminary estimates of funds available from the CVP Restoration Fund to the AFRP for actions, evaluations, monitoring and assessment during FY 96 total \$3 million, increasing to about \$8 million for each of the years in FY 97 to FY 2001.

**Continuing/Sunset Date:** Following review of the AFRP in 1997, the AFRP will develop a three to five year implementation plan.

**Contact:** Marty Kjelson, USFWS (209) 946-6400

**Commercial Ocean Fishing Regulation:** Pursuant to the Magnuson Fishery Conservation and Management Act, the U.S. Department of Commerce regulates ocean harvest to protect against over fishing. The Pacific Fishery Management Council recommends regulations to the Department of Commerce. In California waters, sport harvest is regulated by the California Fish and Game Commission, and the Legislature regulates the commercial fishery. The Legislature

has given authority to the DFG Director to conform state regulations with federal regulations. Enforcement is carried out by the Coast Guard, the USFWS, and the DFG.

Geographic Scope: California coastal waters

Funding: N/A

Continuing/Sunset Date: Continuing

Contact: L.B. Boydston, DFG (916) 653-7794

**Commercial Salmon Stamp Account:** This account was created through 1980s legislation that imposed a stamp fee on commercial salmon fishers and crew as well as commercial passenger salmon fishing vessel operators and crew. The annual stamp fee ranges from \$85 to \$260 and is based on the total pounds of salmon landed during the previous year. Total annual revenue has varied from approximately \$340,000 to just over \$1 million. California's commercial fishing industry played an instrumental role in conceiving the legislation, which provides a significant source of ongoing funding for restoration of salmon and their habitat in the State.

Geographical Scope: Statewide

Funds: Funds are deposited into two subaccounts, the Commercial Salmon Stamp Dedicated Account and the Augmented Salmon Stamp Dedicated Account. The Commercial Salmon Stamp Dedicated Account is \$30 per stamp, and is statutorily directed to salmon rearing. The program annually rears a total of 2 million chinook salmon in the Central Valley at a cost of \$120,000. Expenditures from the augmented account must be in accordance with the recommendations of the Commercial Salmon Trollers Advisory Committee. Projects recommended for funding in the Central Valley include habitat restoration, rearing, equipment for hatcheries and habitat restoration crews, construction projects for facilities to support salmon rearing and habitat activities, and educational programs.

Continuing/Sunset Date: The requirement for salmon stamps extends through December 1996.

Contact: Harvey Reading, DFG (916) 654-6505

**Corps of Engineers Little Holland Tract and Liberty Island Reconnaissance Investigation:** The COE, in coordination with the USFWS, has initiated an evaluation of a proposal to restore fish and wildlife habitat on portions of Little Holland Tract and Liberty Island as mitigation for past impacts of the Sacramento River Flood Control Project. The restoration effort's focus is to restore tidal wetlands, enhance Shaded Riverine Aquatic (SRA) habitat, and enhance aquatic habitat conditions for delta smelt, Sacramento splittail, and winter-run chinook salmon. The principal restoration opportunities exist on the nearly 5,000 acre Liberty Island and approximately 1600 acres on Little Holland Tract. These areas could become components of a new USFWS refuge in the Delta. The Reconnaissance Investigation was used to create Federal

interest in restoration and to find a State sponsor for the feasibility study.

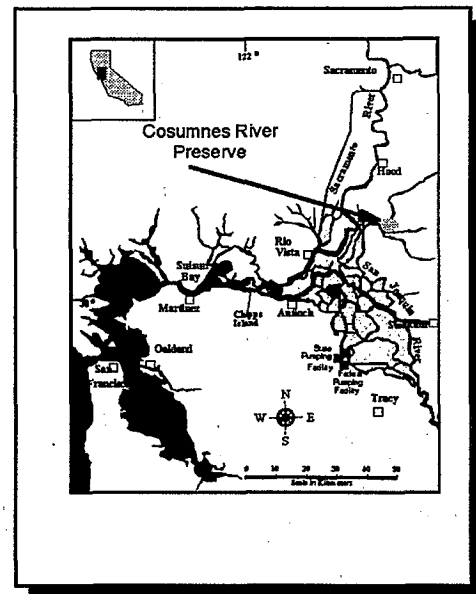
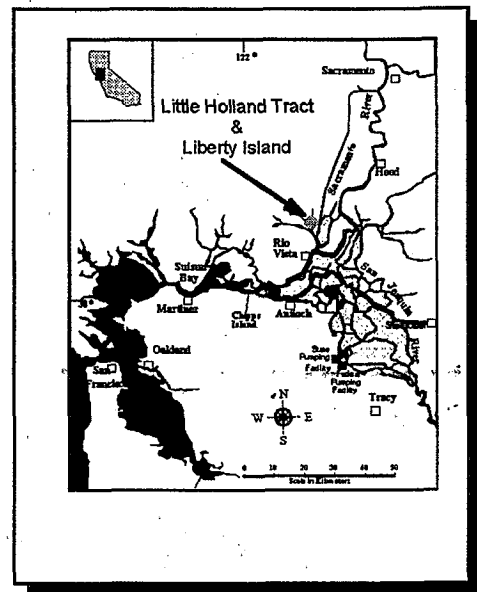
**Geographic Scope:** Liberty Island and Little Holland Tract is located in the Northwestern Delta at the southern end of the Yolo Bypass.

**Funding:** Under the Flood Control Bill, funding was appropriated by Congress for the reconnaissance investigation of Liberty Island and Little Holland Tract. Congress has approved \$1.5 million toward the purchase of Little Holland. The COE has provided \$216,00 for the 1996 fiscal year. However, the future of the project is unknown without a State sponsor.

**Continuing/Sunset Date:** January of 1996 is the sunset date for the reconnaissance study.

**Contact:** Caroline Wilkinson, USFWS (916) 979-2107 or Patricia Roberson, COE (916) 557-6705

**Cosumnes River Preserve (CRP) Project:** The CRP was established to protect a unique Valley Oak Riparian Forest habitat type that includes wetlands. The CRP represents a new generation of conservation initiatives that will preserve entire landscapes. The preserve was established in 1987 as part of The Nature Conservancy's (TNC) Critical Areas Campaign. Much of the success of the preserve is from the partnership of nine organizations under which the preserve has grown from 1,400 acres to more than 6,700 acres. The partners are Ducks Unlimited, TNC, Department of Fish and Game, the Federal Bureau of Land Management (BLM), the Sacramento County Department of Parks and Recreation, California Wildlife Conservation Board, American Farmland Trust, the Department of Water Resources, and Living Farms. Most of the valley oak forests which were once widely distributed in broad bands along the Central Valley rivers and streams are now highly fragmented and in poor condition. In five years a replanting effort of valley oaks at the CRP has established more than 150 acres of new forest. The CRP project continues to provide new and exciting pathways for watershed conservation. For example, the CRP in an





attempt to integrate people and wildlife habitat initiated a new partnership in 1995 between the CRP and Living Farms organic farm. Living Farms developed a plan for a 1,300 acre portion of the preserve to become a patchwork of organic rice fields, protected habitat, and irrigated cattle pastures. Plans are to continue to expand the preserve into the water shed of the Cosumnes River and west into the Delta.

**Geographic Scope:** The Cosumnes River is the last unregulated river flowing from the Sierra Nevada into the Great Central Valley. The CRP is located on its floodplain between Sacramento and Stockton and is approximately 6,700 acres.

**Funding:** Historical funding was provided by Anheuser-Busch through a grant of \$225,000, which was matched by the National Fish and Wildlife Foundation to cover operational costs. Funding is anticipated to continue from the involved agencies. Currently, \$12 million has been spent on purchasing property and \$2 million for habitat restoration.

**Continuing/Sunset Date:** This program is anticipated to continue.

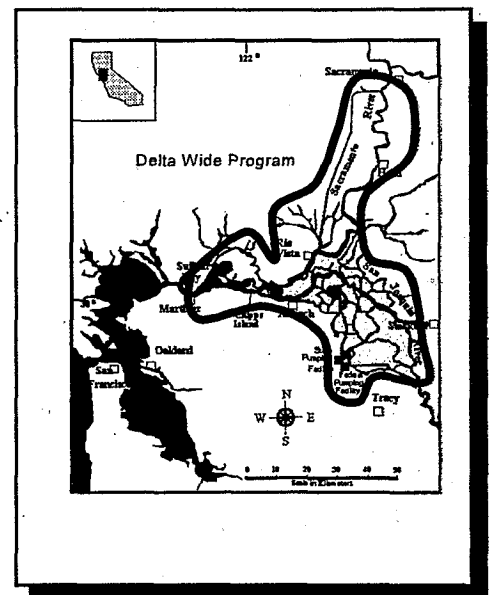
**Contact:** Rich Reiner, TNC (916) 684-2816

**Delta Native Fishes Recovery Team (DNFRT):** The DNFRT developed a draft Delta Native Fishes Recovery Plan in December 1994 which addressed the needs of seven species of fish resident in the Sacramento-San Joaquin Delta (delta smelt, Sacramento splittail, longfin smelt, green sturgeon, spring-run, late fall-run, and San Joaquin fall-run chinook salmon). The basic objective of the Recovery Plan is to establish self-sustaining populations of special concern species that will persist indefinitely. The basic strategy for recovery is to manage the Estuary into improve aquatic habitats for all resident and migratory fish. The team is comprised of fishery biologists from both state and federal agencies, consultants, and academics who worked together with a goal to construct a multi-species recovery plan.

**Geographic Scope:** Sacramento-San Joaquin Delta

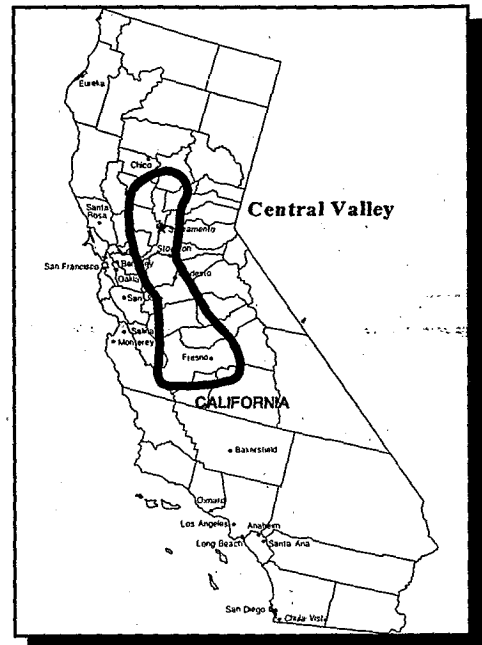
**Funding:** N/A

**Continuing/Sunset Date:** Currently, the plan is being finalized in the Portland Regional Office of the Fish and Wildlife Service and should be available May 1, 1996.



Contact: Bob Pine, USFWS (916) 979-2752

**Delta Pumping Plant Fish Protection Agreement or Four Pumps Agreement:** In 1986, DFG and DWR entered into an agreement to offset fishery losses of chinook salmon, steelhead and striped bass at the SWP facilities. Since its inception DWR has provided funds to raise striped bass, construct and install screens, begin construction of the Tuolumne River hatchery, and fund numerous other actions to benefit aquatic resources, particularly salmon and striped bass. Within the 1986 Agreement, Article VII initiated further discussions to resolve remaining issues pertaining to fishery impacts, indirect losses, and the potential for additional facilities. In 1990, the Bureau of Reclamation joined in the Article VII process. Initial Article VII negotiations are now completed with the recent signing of an agreement. That agreement identifies the 1994 December Accord and the 1995 Water Quality Control Plan, which are expected to address the remaining direct and indirect impacts to fish. DWR will seek permission to undertake pumping beyond current constraints imposed by the COE and is now in the process of completing the necessary environmental documentation.



Geographical Scope: Central Valley, including Deer and Mill Creek and the Delta and San Joaquin River Basin. Projects are implemented based on approval of the directors of DFG and DWR.

Funding: In addition to annual obligations for losses of fish at the SWP pumping plant, \$15 million was allocated to initiate a program to increase the probability of quickly recovering fish populations: DWR has approved expenditures of about \$5.8 million from the \$15 million account and has spent about \$6 million in annual mitigation projects: Grizzly Island Fish screen; Suisun Marsh Diversion Screening Program; hyacinth control projects on the Merced River; salmon spawning gravel restoration project in the upper Sacramento River; water exchange operations in Mill Creek and Deer Creek; and expanded the Delta/Bay Enhanced Enforcement Program. SWP contractors provide about \$2,000,000 annually to this fund.

Continuing/Sunset Date: December 1, 1996 is the sunset date, however a renewal to this Agreement is anticipated.

Contact: Fred Jurick, DFG, (916) 657-4226



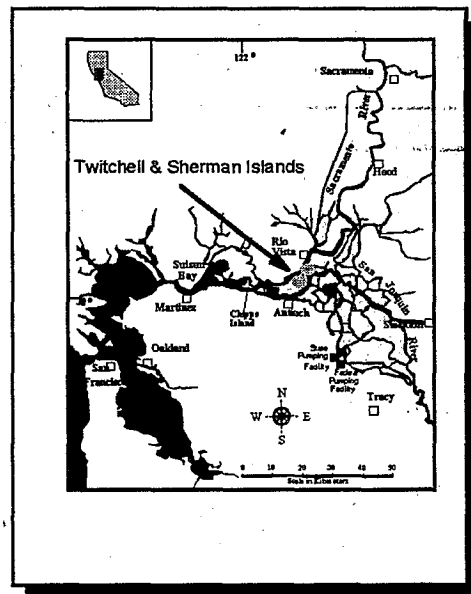
submit to the Governor and the Legislature a report describing the progress in achieving the objectives. There is a sunset date of June 1997. However Legislature has asked for a two year extension. The outcome of this will be known in late 1996.

Contact: Margit Aramburu, DPC (916) 776-2292

#### **Department of Water Resources' Western Delta**

**Program:** Water management planning in the west Delta was initiated by the State Water Project to address the issues of land subsidence, levee instability, and wildlife habitat. To protect the Delta's water quality for beneficial use, Twitchell and Sherman Islands need to be protected from flooding.

Planning on the islands of Twitchell and Sherman is focused on changing land use practices to stop or reverse the ongoing land subsidence, while providing significant wildlife and wetland habitat values. There has been a good response of willing land owners to sell their agricultural lands to DWR based on an independent appraised value. DWR has acquired 3,000 acres of land on Twitchell Island and about 5,700 acres on Sherman Island.



Specifically, the plan's objectives of the plan to develop Twitchell and Sherman Islands are:

- To investigate agricultural and wetland/wildlife management ;
- To respond to Federal and State policies for the enhancement and expansion of wetlands;
- To alter land use practices to provide substantial flood control benefits, additional protection to Delta water quality and supply reliability, and potential additional recreational opportunities in the Delta;
- To develop habitat to be available as mitigation for impacts associated with DWR Delta water management programs;
- To explore Category III applicability in connection with the December 15, 1994 Accord;
- To test programs, such as diversion screening, shifting the diversion timing, reduction of subsidence due to better land management, and timing agricultural drainage to reduce TDS and organics.

Geographical Scope: Western Delta

Funding: SWP Funded: Land purchase \$30 million dollars. No funding lined up for development. Administrative costs are paid through regular SWP charges.

**Contact:** Dave Brown, DWR (916) 653-6673

This program has four discrete elements which are to be integrated with ongoing activities in the field. They are the Four Pumps Habitat Restoration Coordination, Sacramento Valley Habitat Restoration Coordination, Winter-run Chinook Coordination, and Winter-run Chinook Data Analysis. The mission of this multifaceted program is to manage, restore, and enhance Central Valley anadromous fish populations and the habitats upon which they depend for their ecological values and for their use and enjoyment by the public. The two overriding precepts that guided development and prioritization of action recommendations were 1) that those fish or wildlife populations in jeopardy of extinction should be restored to a healthy stable condition, 2) all anadromous populations should be significantly increased with the long-term goal of doubling their 1988 numbers. The doubling goal for anadromous fish was established by the State legislature in 1988 with the passage of the Salmon, Steelhead Trout, and Anadromous Fisheries Program Act (Chapter 1545/88). The restoration program is intended to facilitate implementation of the November 1993 report, "Restoring Central Valley Streams: A Plan for Action." This plan relies heavily on the presumption that the major fish and wildlife habitat problems in the Delta will be corrected. The maximum fish and wildlife benefit will be achieved only through the integrated implementation of all proposed actions.



**Funding:** Sources of funds come from: Fish and Game Preservation Fund; Commercial Salmon Stamp Account; Striped Bass Stamp Account; Steelhead Trout Catch-Restoration Card; Public Resources Account (Proposition 99); California Wildlife; Coastal and Public Land Conservation Fund of 1988 (Proposition 70); Bosco-Keen Renewable Resources Investment Fund; Keene-Nielsen Fisheries Restoration Account; Wildlife Conservation Board; Department of Parks and Recreation; Environmental Enhancement and Mitigation Program; Davis-Dolwig Act; Davis-Grunsky Act; Urban Streams Restoration Program; Four Pumps Agreement; Tracy Pumping Plant Agreement; Federal Aid in Sport Fish Restoration Act; and Public Law 102-575 the



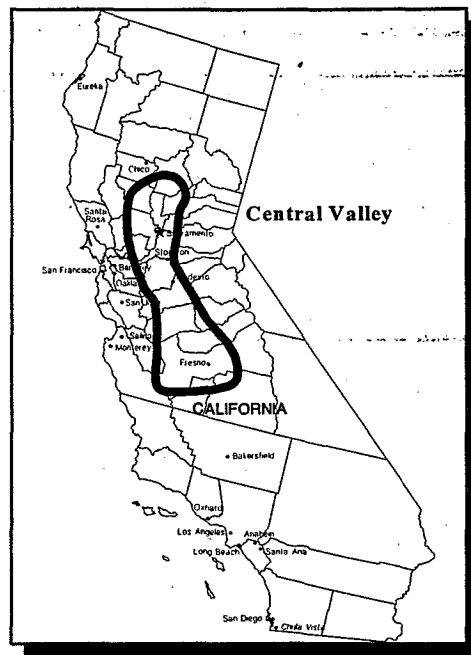
Geographical Scope: Legal Delta

Funding: No specific funding source is used since existing DFG staff funded through their various programs participate on the team. No separate funding is provided.

Continuing/Sunset Date: It is anticipated that DMIT will continue indefinitely.

Contact: Patricia Brantley, DFG (209) 948-7800

**Department of Fish and Game Fish Screening and Fish Passage Coordination Project:** There is currently no comprehensive inventory of water diversions, fish screens, fish passage barriers, and fish passage devices in California. This statewide project is meant to fill that void. The Fish Screening and Fish Passage Coordination Project is starting in the Central Valley by addressing impacts to winter-run salmon and delta smelt. In addition to developing the database, the project is: reviewing and evaluating developments in fish screening and fish passage facilities; evaluating and prioritizing water diversions that should be modified to protect fisheries; installing fish screens and implementing other corrective actions; and, providing evaluations of the benefits and costs of correcting fishery impacts.



Geographic Scope: Statewide, starting in the Central Valley.

Funding: Historic and current funding is from sport fish restoration monies, bond propositions, and a small amount comes from the striped bass stamp funds.

Continuing/Sunset Date: Continuing

Contact: Dan Odenweller, DFG (916) 654-2731

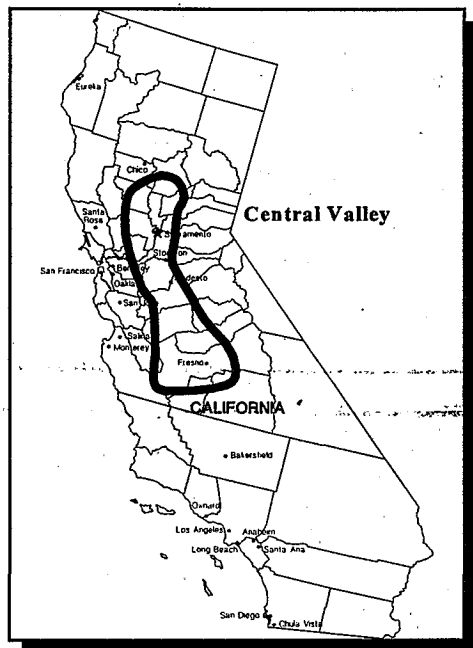
**Ducks Unlimited VALLEY CARE Program:** This program is DU's comprehensive plan to bridge the gap between conservation and the private landowner in the Central Valley, particularly rice farmers. A primary program component is to maintain agricultural productivity on rice farms while satisfying the migratory waterfowl habitat needs. Working with the California Rice Industry Association, the water constituencies, other conservation groups and individual rice growers, DU manages this program, that includes the production and distribution of general information materials as well as technical guides for property owners.

Geographic Scope: Central Valley

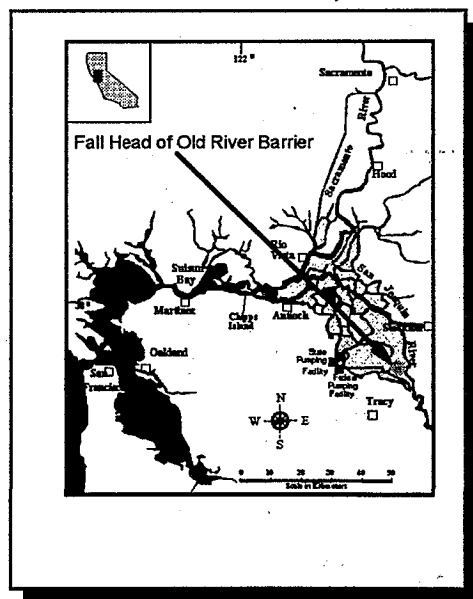
Funding: Funding for private lands comes from foundations and grants. This is the type of funding is anticipated to continue.

Continuing/Sunset Date: Continuing

Contact: Steve Burton, DU (916) 363-8257



**Fall Head of Old River Barrier:** For the past two decades the Department of Water Resources (DWR), under the 1969 "MOU of Interim Measures to Protect Fish in the Sacramento-San Joaquin Delta Prior to Construction of the Peripheral Canal" and in coordination with the Department of Fish and Game (DFG) and U.S. Bureau of Reclamation (USBR), has installed the fall Head of Old River Barrier (HOR). Water quality in the San Joaquin River begins to deteriorate in the fall when inflow to the river is low, upstream water diversions are high, water temperatures are high, and inputs from upstream dischargers such as the Stockton Sewage Treatment Plant increase the biochemical oxygen demand (BOD). Low DO levels in the San Joaquin river from the Turning Basin to Turner Cut resulted in the installation of a temporary rock barrier at the head of Old River in the fall to improve DO levels in the San Joaquin River between Stockton and Turner Cut. This barrier increases flow down the San Joaquin River to improve low dissolved oxygen (DO) levels and to





improve conditions for upstream migrating adult salmon that may be blocked by low DO levels. In some years this barrier can also help the downstream migration of yearling salmon released in the fall from the Merced River Hatchery. The responsibilities of the involved agencies are as follows: DWR is responsible for constructing and removing the barrier, monitoring of the DO concentrations in the San Joaquin River, obtaining the necessary permits, and coordinating the overall activity; the USBR is responsible for any needed San Joaquin River flow augmentation not to exceed 60,000 AF in any one year; and the DFG is responsible for evaluating these protective measures in coordination with other fish and wildlife agencies, trucking juvenile salmon to the Estuary, and monitoring temperature conditions in upstream areas.

Geographic Scope: On the San Joaquin River from Vernalis to Prisoner's Point.

Funding: \$108,000 for installation, operation, and removal. This cost will be shared by DWR and USBR.

Continuing/Sunset Date: Continuing

Contact: Stein Buer, DWR (916) 653-6628, sbuer@water.ca.gov

**Governor's California Wetlands Conservation Policy (August 1993):** The goal of the California Wetlands Conservation Policy is to establish a policy framework and strategy that will:

- Ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California;
- Reduce procedural complexity in the administration of State and Federal wetlands conservation programs;
- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetlands conservation and restoration.

There are three actions necessary to achieve these objectives: 1) statewide policy initiatives; 2) three geographically based regional strategies in which wetlands programs can be implemented, refined, and combined to achieve the policy's goals and objectives; and 3) creation of an interagency wetlands task force to direct and coordinate administration and implementation of the policy.

Geographic Scope: Statewide

Funding: This is an executive order (policy) therefore no specific funding has been set aside. However, EPA has provided \$80,000 for the 95/96 fiscal year to go towards California wetland conservation.



than fee. In addition, the Wildlife Conservation Board is authorized to acquire, lease, rent, sell, or exchange any land or options acquired, with the proceeds supporting other IWCP projects.

Geographic Scope: Central Valley

Funding: IWCP receives proceeds from annual appropriations from the Wildlife Conservation Board.

Continuing/Sunset Date: Continuing

Contact: Marilyn Cundiff-Gee, WCB (916) 445-8448

**Jepson Prairie Preserve(JPP):** The JPP is 1566 acres of native perennial bunch grasses, vernal pools, and several rare and endangered species. This is considered by many to be the most extensive remnant stand of native prairie in the Central Valley. It is owned by The Nature Conservancy (TNC) and is managed jointly by TNC and University of California, Davis through the U.C. Natural Reserve System. The purpose of this joint management is to foster research and educational use of the Preserve.

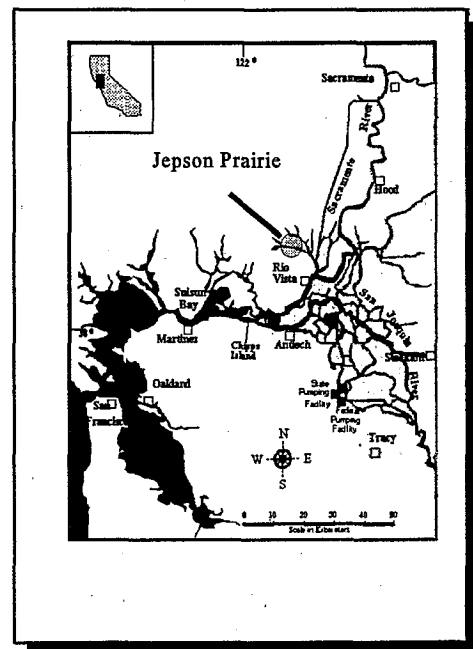
Geographic Scope: The Preserve is located in Solano County in the southern Sacramento Valley near Travis Air Force Base.

Funding: N/A

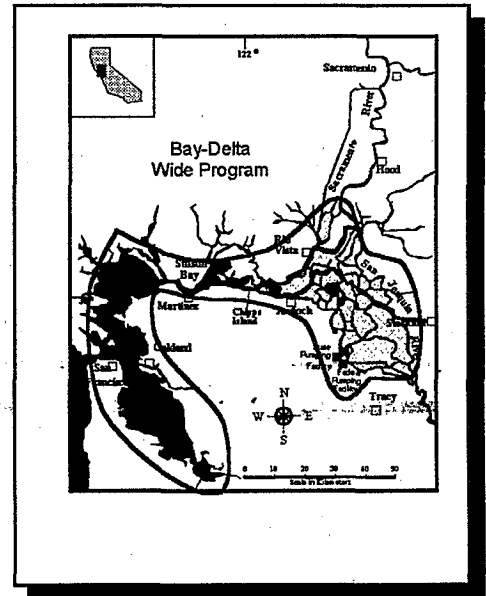
Continuing/Sunset Date: Continuing

Contact: Kevin Williams, U.C. Davis (916) 752-6949

**Interagency Ecological Program (IEP):** The IEP was initiated in July 1970 by a Memorandum of Agreement (MOA) between the California Department of Fish and Game, California Department of Water Resources, U.S. Bureau of Reclamation, and U.S. Bureau of Sports Fisheries and Wildlife (now Fish and Wildlife Service). The MOA was an outgrowth of testimony at hearings on Water right Decision 1379, which indicated construction and operation of the SWP and CVP may have been contributing to fish and wildlife problems in the Estuary. Also indicated was a need for more information regarding environmental requirements of fish and wildlife and ways to design and operate the water projects to minimize detrimental effects on those resources. During the 1978 State Water Resources Control Board hearings of Water Right



Decision 1379 it was decided to expand studies into the Bay. Decision 1485 established the 1979 Delta Outflow/San Francisco Bay Study which developed outflow standards protecting the bay. This element of the IEP brought a biological and hydrodynamic component in and brought the U.S. Geological Survey (USGS) and State Water Resources Control Board (SWRCB) into the IEP. The U.S. Corps of Engineers is also in the IEP. The Data Management element was added in 1984. The program brings together various state and federal agencies so that they can better coordinate their activities for water management issues. A representative is in each of the following Technical Coordinating Committees of the IEP: Fisheries/Water Quality Program; Fish Facilities Study (National Marine Fisheries Service is on this committee); Hydrodynamics Committee; Delta Outflow/San Francisco Bay Study; and Data Management Committee.



**Geographic Scope:** Sacramento-San Joaquin Estuary consisting of South and Central San Francisco Bay, San Pablo Bay, Suisun Bay, and the Sacramento-San Joaquin Delta.

**Funding:** Approximate contributions from Federal and State funding for the IEP are: DWR, \$6,000,000; USBR, \$3,000,000; USGS, \$966,000; USFWS, \$220,000; DFG, \$1,345,000; CVPIA, \$100,000; Contra Costa Water District \$35,000. Total contributions \$12,041,500.

**Continuing/Sunset Date:** Continuing

**Contact:** Pat Coulston, DFG (209) 948-7800 or the home page accessed on the Internet; <http://www.wiep.water.ca.gov>

**Introduced Aquatic Plant Species Control:** There is currently no coordinated interagency effort dealing with the exclusion, detection, and eradication of introduced aquatic plant species in the Sacramento-San Joaquin Delta. The Department of Boating and Waterways (DBW) has budgeted a large amount of time and money for the detection and management of water Hyacinth in the Delta. The DBW is also researching ways to contain and eradicate potential plant species such as Elodia and Egeria. The Integrated Pest Control Branch of the California Department of Food and Agriculture (DFA) is a lead agency in detecting and controlling Hydrilla throughout the State. The DFG and the DWR also budget a portion of their funds for the detection and management of introduced plant species through out the State.

Geographic Scope: Statewide

Funding: DBW, DFA, DFG, and DWR have individually budgeted money towards introduced aquatic plant species control.

Continuing/Sunset Date: N/A

Contact: Valerie VanWay, DBW (916) 322-1808; Ross O' Connel, CDFA (916) 654- 0768

**Introduced Aquatic Species Control:** There is currently no coordinated effort to curtail the introduction of aquatic species into the Sacramento-San Joaquin Delta. The DFG Wildlife Protection Division works to prevent the intentional and unintentional introduction of non-native species into the State. The Department of Food and Agricultural at border inspection stations examines all vehicles and vessels entering the State for prohibited species. Currently, the DFG, DFA, and DWR are working together to develop a plan that would deter the entry of zebra mussel (*Dreissena polymorpha*) through 1) an intense border inspection of boats from areas where zebra mussels are present, and 2) tougher restrictions on the import of bait fish from states where zebra mussels are known to exist. Funding for this program is limited and the controlling factor in establishing this program.

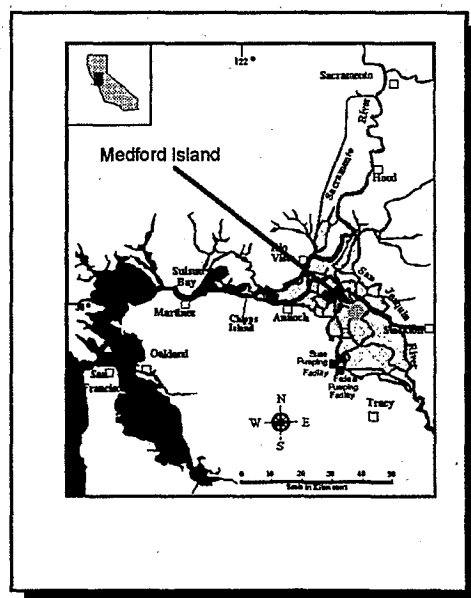
Geographic Scope: Statewide

Funding: DFA, DFG, DWR have individually budgeted money towards introduced aquatic animal species control. A cooperative effort to develop a plan to deter entry of zebra mussels has been made.

Continuing/Sunset Date: N/A

Contact: Bill Sandige, DFA (916) 653-1440

**Medford Island Multi-Species Protection and Enhancement Project:** This island is privately owned and is currently being offered as a mitigation bank for projects seeking mitigation credits. The Medford Island's Reclamation District 2041 proposes to establish a cooperative conservation banking agreement between the USFWS, COE, USEPA, DFG, and San Joaquin County. The focus is to develop a privately operated conservation bank to create, restore, and preserve wetland, riparian and upland habitat in advance of an anticipated need for mitigation for project construction impacts. In addition to



the mitigation bank the project would improve the 14,000 linear feet of levee to facilitate the flooding and creation of shallow water habitat. This shallow water habitat could benefit Delta fish species and divert fish that are entrained to the export facilities due to flow queues. This project has received funding from the SB 34 to improve the island's levee. The Medford project is currently petitioning for funds from Category III to implement wetland, riparian, and estuarine restoration.

Geographic Scope: Medford Island, 1200 acre island in Central Delta

Funding: Medford Island landowners would provide the financial resources necessary to facilitate site development and habitat restoration.

Continuing/Sunset Date: Continuing

Contact: Kent Smith, McCollum Associates (916) 488-0332

**Montezuma Wetlands Project:** This private project seeks to beneficially reuse dredged sediment to restore subsided tidal marshlands and seasonal wetlands in the Suisun Marsh by raising them back to intertidal elevations.

Geographic Scope: Suisun Bay

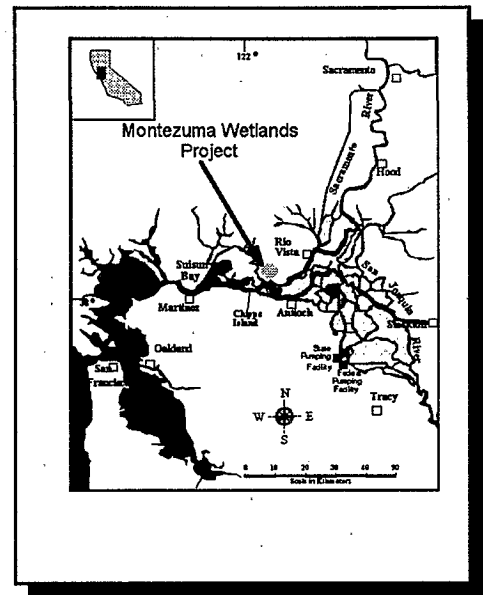
Funding: Private investments

Continuing/Sunset Date: Continuing

Contact: Doug Lipton, Levine/Fricke (510) 652-4500

**National Estuarine Reserve Research System:** This program was established by the Coastal Zone Management Act of 1972 and is administered by National Oceanic and Atmospheric Administration (NOAA). It is a non-regulatory, State-Federal program seeking to establish a system of reserves representing the nation's diverse estuarine types. It will contribute to the protection of wetland areas and provide a framework for long-term research and monitoring. The San Francisco Bay-Delta Estuary has been nominated by Governor Wilson for inclusion in the system.

Geographic Scope: National



Funding: NOAA

Continuing/Sunset Date: Continuing

Contact: Mike Vasey, San Francisco State University (415) 338-1957

**North Bay Initiative (NBI):** Thirteen local, State and Federal agencies signed a cooperative Agreement establishing the NBI. These agencies pledged an interest based, land-stewardship approach to work with landowners and local governments to address environmental restoration, development incentives for continuing agricultural and forge partnerships for determining sensible and uses.

Geographic Scope: North Bay

Funding: USEPA 104(b)(3); Geographic Initiative dollars (\$80,000 in 1995) for projects.

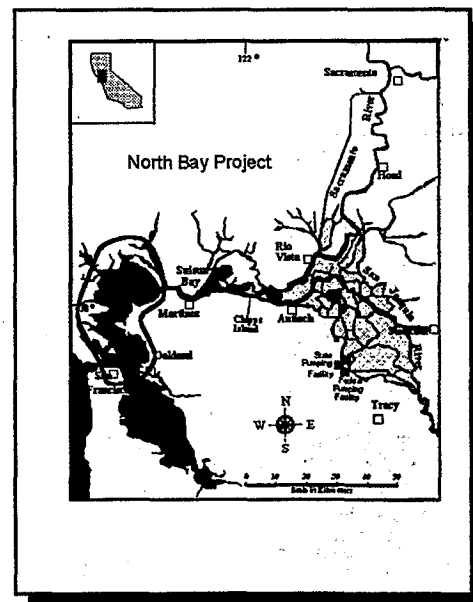
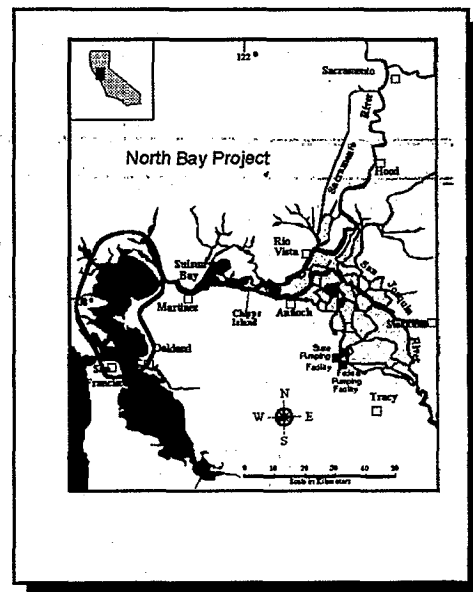
Continuing/Sunset Date: N/A

Contact: Lead Agency USEPA

**North Bay Wetlands Protection Program (NBWPP):** The NBWPP works with San Pablo Bay regional governments to identify and assure comprehensive protection, restoration, and enhancement of North Bay wetlands. In addition, NBWPP allows appropriate development to occur outside wetland areas. This program consists of two phases:

- Phase 1- Wetlands Protection Plan outlines policies, goals, and objectives for regional wetlands planning including riparian, and wetland habitat protection;
- Phase 2 - Implementation Component would help localities amend local General Plans, zoning ordinances, and other policies to implement the Wetlands Protection Plan.

Geographic Scope: The planning area extends from Gallinas Creek to Carquinez Strait and is bounded by Highway 101 to the west, highways 116 and 12 to the North, and Highway 29



on the East. Counties include Marin, Napa, Sonoma, Solano, and the cities of American Canyon, Petaluma, Napa, Novato, San Rafael, and Vallejo.

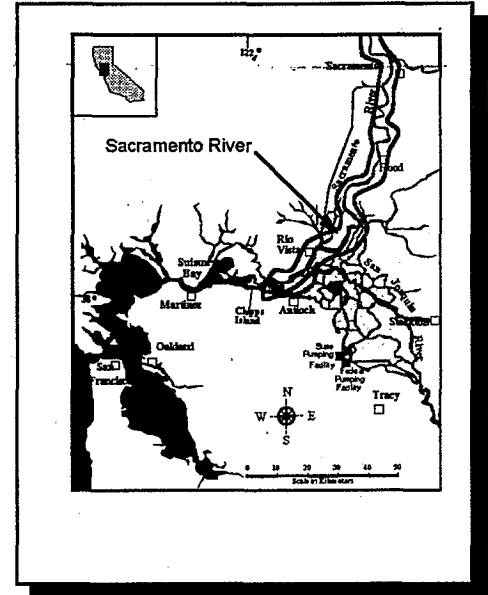
Funding: NOAA 309; U.S. EPA State Wetland Development Grant; State of California (match).

Continuing/Sunset Date: Continuing

Contact: Jefferey Blanchfield, BCDC (415) 557-3686

**Northern California Streams Sacramento River Fish**

**Migration:** This is a feasibility study to develop a cost effective plan for restoration of shaded riverine aquatic (SRA) and riparian vegetation along the Sacramento River. Improved SRA and riparian habitats will aid anadromous fish during their migration between spawning areas and the ocean. The selected plan will not compromise the Sacramento River Flood Control or Sacramento River Bank Protection Projects and will be supported by a non-Federal cost sharing partner. The COE has the lead in this effort and is looking to DWR to be the non-Federal cost-sharing sponsor during the feasibility study phase. This study is being closely coordinated with DFG, NMFS, and USFWS.



Geographic Scope: Sacramento River from Verona, 10 miles above Sacramento to Collinsville.

Funding: The reconnaissance report was fully funded by the Federal government. Cost sharing for the feasibility phase, estimated to be \$2.5 million, is 50% Federal funds and 50% non-Federal funds. Construction cost sharing is 75% Federal and 25% non-Federal. Sponsor provided land values are applied to the 25% non-Federal requirement. The COE is looking to DWR to provide the non-Federal cost sharing for feasibility.

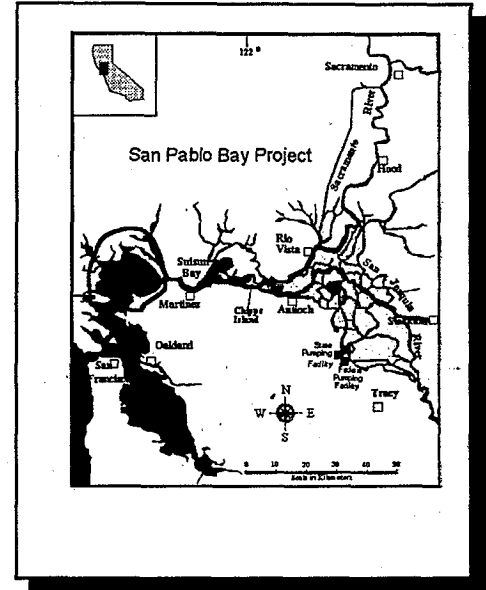
Continuing/Sunset Date: Continuing efforts depend on funding.

Contact: Rick Dreher, COE (916) 557-676

**Partnership for the San Pablo Baylands (Partnership):** The Comprehensive Conservation Management Plan (San Francisco Estuary Project) identified the San Pablo Bay as an area particularly threatened by wetlands loss, and recommended that government agencies, landowners, and conservationists cooperate to create immediate opportunities for protection, acquisition, and restoration. The Plan also made specific recommendations on strategies to



build public awareness, interest, and support for the Plan's goals and action plans. In addition, the State Wetlands Policy makes clear that partnerships with land owners is an essential element of the State's Wetland Protection strategy. The Partnership is a non-regulatory, community oriented project designed to promote enhancement of San Pablo Bay's wetlands resources and to encourage preservation of the region's agricultural lands. The Partnership program fills a specific niche which both complements and augments the wetlands planning activities of the SFBRWQCB and BCDC. The Partnership consists of two major programmatic elements: the Partnership Campaign and the Baylands Enhancement Project. The Partnership Campaign is a public education and involvement project highlighted by several events aimed at building support for Baylands enhancement with the general public and planning process participants. The Baylands Enhancement Project assembles stakeholders for a series of focused meetings to produce a Baylands Enhancement Plan. The exercise will culminate in the selection demonstration projects to initiate the Plan implementation.



**Geographical Scope:** North side of San Pablo Bay

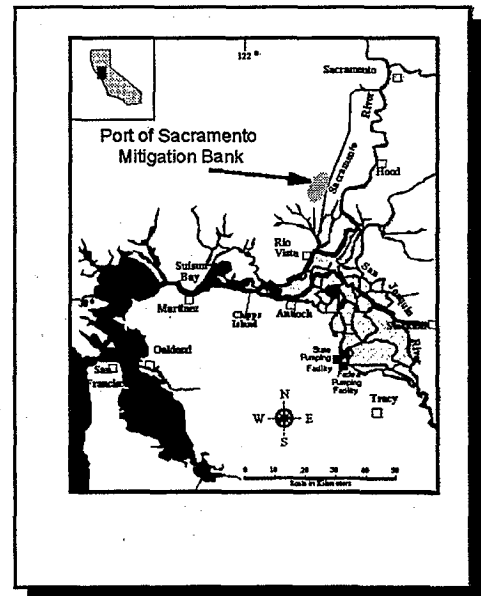
**Funded:** The SFBRWQCB awarded a \$500,000 grant from the \$1.8 million Selenium Mitigation Fund to Save San Francisco Bay Association for their proposed Partnership for the San Pablo Baylands.

**Continuing/Sunset Date:** Continuing

**Contact:** Peggy Olofson, SFBRWQCB (510) 286-0427

**Port of Sacramento Mitigation Bank:** The Port of Sacramento has signed a MOU with the DFG to create a mitigation bank on about 420 acres of land parallel to the Deepwater Ship Channel. 90% of these lands will be used in agricultural easements and 10% for wildlife habitat improvements. No easements are in place.

**Geographic Scope:** 420 acres parallel to the deepwater shipping channel.



**Funding:** No funding is currently available due to lack of developer interest.

**Continuing/Sunset Date:** This program is expected to continue because once funds are acquired they will put into a trust fund and used in perpetuity.

**Contact:** Dave Zezulak, DFG (916) 358- 2929

### **Prospect Island Fish and Wildlife Habitat Restoration**

**Project:** The Prospect Island Fish and Wildlife Restoration Project's objective is to reduce levee maintenance costs while providing habitat for fish and wildlife resources. The USBR owns the island and is investigating restoration alternatives to return part of the island to tidal habitat. A multi-agency team has been working with the COE to design a restoration project that would optimize fish and wildlife values particularly for delta smelt, winter-run chinook salmon, and wintering waterfowl. Once construction is completed, USFWS will take over operations and management of Prospect Island.

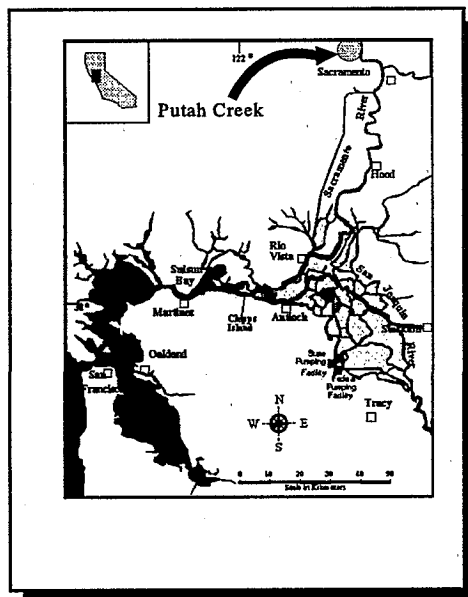
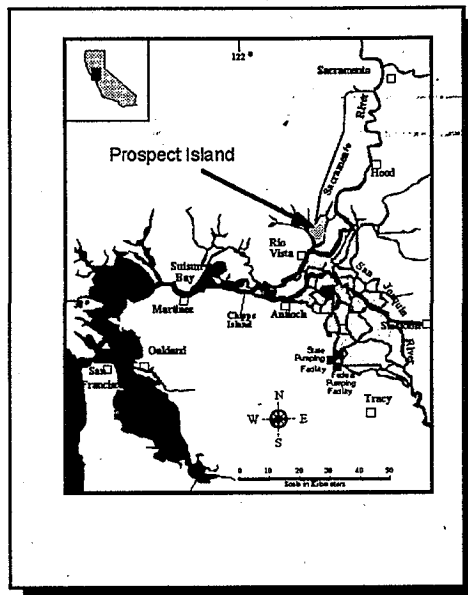
**Geographic Scope:** Prospect Island

**Funding:** Currently funding has been approved through 1135 however, no funding is available as of yet due to a lack of a Federal budget. USFWS hopes to use endowment funds to operate and manage Prospect Island. The COE contributed \$250,000 (FY96), Category III provided \$250,000 (FY96), and USBR \$163,000 in FY 95.

**Continuing/Sunset Date:** Continuing

**Contact:** Leslie Lew, U.S. Corps of Engineers (916) 557-6929

**Putah Creek, South Fork Preserve:** The restoration of 130 acres of riparian and wetland habitat is being planned on a ½ mile reach of the South Fork Putah Creek. The objective of this modification of the Sacramento River Flood Control Project is to increase fish and wildlife populations dependent on riparian and wetland habitats, including species of special concern, (e.g., Swainson's



hawk, northern harrier, white-tailed kite, giant garter snake, western pond turtle, and valley elderberry longhorn beetle). The project would contribute to local, State, and Federal goals established for recovery of these habitats.

Geographic Scope: ½ mile reach of the South Fork Putah Creek

Funding: The project will cost \$2,200,000. The non-federal share of implementing this project is estimated at \$700,000 and includes lands; Category III funds are proposed to reimburse the City of Davis part or all of the non-federal share of the project. Implementation funding will be required in fiscal year 1997. In FY 1995, the EPA and the Central Valley Regional Water Quality Control Board provided \$114,000.

Continuing/Sunset Date: Continuing efforts depend on funding.

Contact: Rick Dreher, COE (916)557-6769

**Resource Agency Conservation Banking Policy:** The executive and legislative branches have endorsed the use of conservation banks as a means to accomplish important resource management goals. A conservation bank is a single parcel, or a series of contiguous or non-contiguous parcels, of habitat which is managed for its natural resource value. The resource benefits derived from this management regime are sold as "credits" to project proponents who seek mitigation opportunities to compensate for resource impacts elsewhere. Credits may be generated to meet any number of resource conservation needs including compensation or endangered species, environmentally sensitive habitat areas, mudflats, sub-tidal areas, and less sensitive resources.

Geographic Scope: Statewide

Funding: N/A

Continuing/Sunset Date: Continuing

Contact: Craig Denisoff, Resources Agency (916) 654-2753

**Riparian Habitat Joint Venture (RHJV):** Eleven Federal, State, and private organizations signed the cooperative agreement to protect and enhance habitats for native land birds throughout California. The RHJV reinforces other collaborative efforts currently underway which protect biodiversity and enhance natural resources. By developing a coordinated statewide effort, fragmented habitat will be replaced with an extensive network of riparian forests capable of supporting viable breeding populations of native birds. A wide variety of plants and animals will benefit from these riparian corridors. The objects of the RHJV are:



navigation. The Regional Planning Report will include: 1) documentation of the many ongoing planning activities and land use studies in the Delta; 2) plans for potential COE involvement in Delta flood control studies, considering other planning efforts and using risk-based analysis; 3) plans for potential COE involvement in environmental restoration studies in the Delta pursuant to COE authorities and consider other planning efforts; 4) plans for potential COE navigation studies in the Delta; and 5) implementation of a levee criteria development program that will include construction of a levee test section.

Geographic Scope: Legal Delta

Funding: Total estimated cost of the study is \$5,743,000. All study costs are to be cost shared between the COE and DWR on a 50-50 basis. Furthermore, the sponsor will provide, half of its share as a cash contribution.

Continuing/Sunset Date: The report is scheduled for completion in 1999.

Contact: Rick Dreher, COE (916) 557-6769

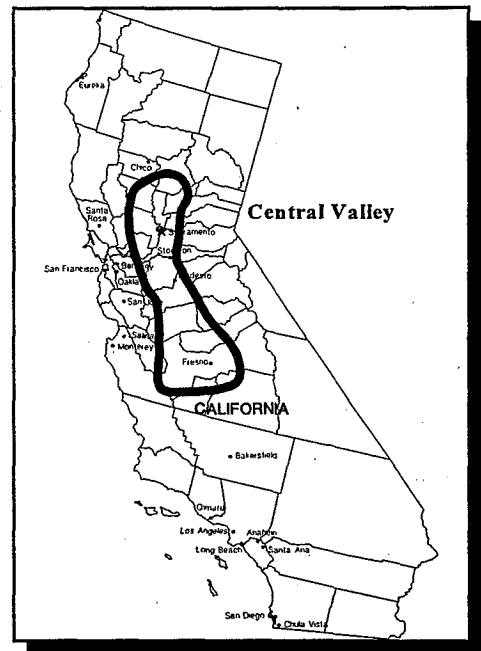
**Sacramento Spring-run Chinook Salmon Effort:** The spring-run chinook was once the most abundant race of salmon in California producing about one million fish annually, and has been a major cultural, biological and economic asset in this state. Currently, less than 1,000 native spring-run return annually. The California Fish and Game Commission denied a petition to list the spring-run chinook salmon as an Endangered Species. The Commission is slated to establish a special classification for "Monitored Species." Monitored species will require routine status reports submitted to the Commission and progress reports for habitat improvements for the listed species. Sacramento Spring-run chinook salmon will become a monitored species.

Geographical Scope: Sacramento River and certain east valley rivers and the Sacramento-San Joaquin Delta.

Funds: N/A

Continuing/Sunset Date:

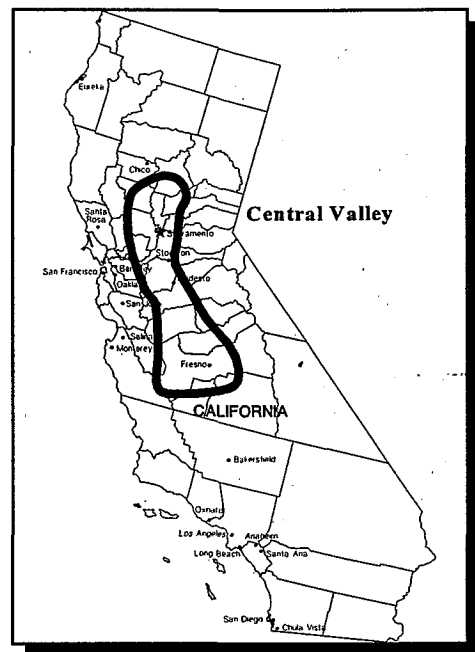
Contact: Deborah McKee, DFG (916) 653-8983



**Salmon and Steelhead Hatchery Program in the Central Valley:** DFG operates four salmon and steelhead hatcheries in the Central Valley: Feather River Hatchery; Nimbus Hatchery (American River); Mokelumne River Hatchery; and the Merced River Hatchery. The USFWS operates the Coleman National Fish Hatchery (Battle Creek). These hatcheries have production goals of close to 30 million fish per year.

Geographical Scope: Central Valley

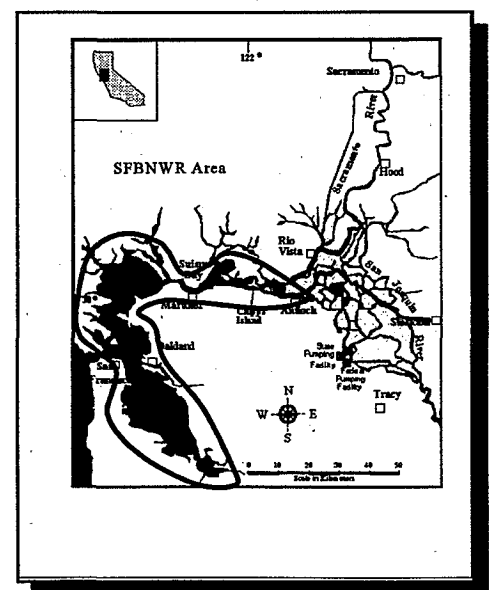
Funds: Feather River Hatchery is funded by DWR as mitigation for Oroville Dam; Nimbus Hatchery (American River) is funded by USBR; Mokelumne River Hatchery is operated by DFG, construction costs were from EBMUD, and production costs for enhancement come from the Commercial Trollers Stamp Fund; and the Merced River Hatchery was built by Merced Irrigation District (MID) funded by the Davis-Grunsky Act, the hatchery is operated by DFG, operation and assistance and partial maintenance costs from MID. To manage this program, DFG receives \$9 million per year from the Fish and Game Preservation Fund, in addition to mitigation money provided by responsible agencies.



Continuing/Sunset Date: Continuing

Contact: Gene Fleming, DFG (916) 653-4729

**San Francisco Bay National Wildlife Refuge (SFBNWR):** The goal is to preserve, restore, and enhance San Francisco Bay's natural ecosystem. The U.S. Fish and Wildlife Service is the major landholder and manages the SFNWR. These holdings include the San Pablo Bay National Wildlife Refuge, and the Antioch Dunes National Wildlife Refuge. The purposes of the refugia are preservation of a diversity of habitats for wildlife, management of migratory bird populations, and management of endangered species. Under federal legislation, the SFNWR is authorized to acquire 43,000 acres in the Bay Area. Currently, the SFNWR holds 19,058 acres (74% salt ponds, 18% salt marsh, 6% uplands, 1% seasonal wetlands, and 1% mudflats/open water).



Geographical Scope: San Pablo Bay National Wildlife Refuge, and the Antioch Dunes National Wildlife Refuge.

Funds: N/A

Continuing/Sunset Date: N/A

Contact: Betsy Radtke, USFWS (510) 792-0222

**San Francisco Bay Joint Venture (SFBJV):** The Joint Venture is a partnership of public agencies and conservation organizations focused on wetlands acquisition, restoration and enhancement. It will utilize the results of the Regional Ecosystem Goals Project as well as other efforts. Habitat and restoration goals will be accomplished via public/private partnerships involving public agencies, environmental organizations, the business community, landowners, and local government.

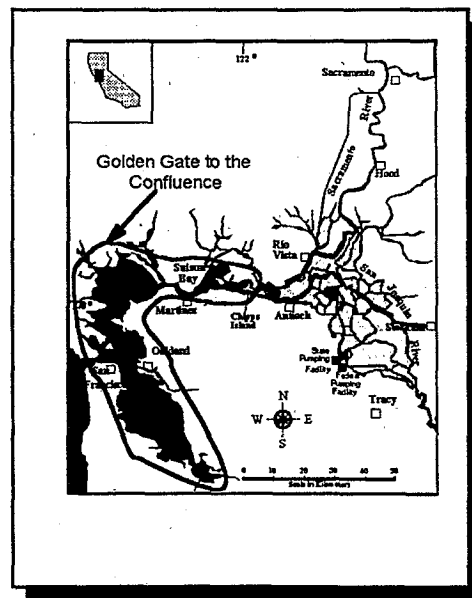
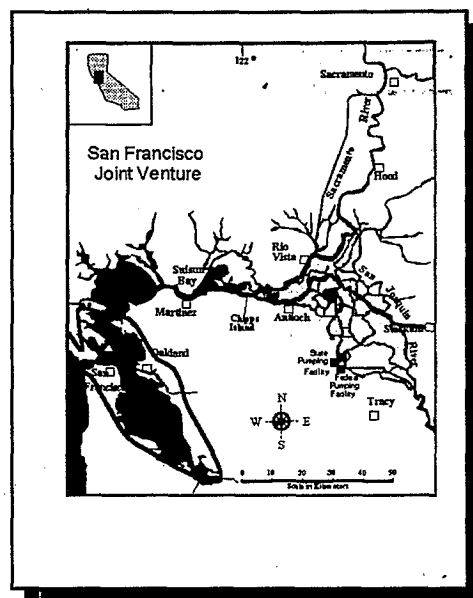
Geographic Scope: San Francisco Bay watershed and the San Mateo Coastal area.

Funding: The SFBJV coordinator position is being funded by the Coastal Conservancy and USEPA. Funding for projects is anticipated to come from a combination of the SFBJV partners, public and private grant programs, settlement fines, and other new sources to be identified as the SFBJV moves ahead.

Continuing/Sunset Date: N/A

Contact: Nancy Schaefer, Coordinator (510) 286-6767

**San Francisco Bay Regional Ecosystem Habitat Goals:** This project is being overseen by the San Francisco Regional Water Quality Control Board with multi-agency resource manager involvement and assistance by the San Francisco Estuary Institute, in concert with several sponsoring state and federal agencies, to develop regional wetlands habitat goals through a scientific/technical process. The Project will eventually produce a series of conceptual options in both



written and graphical formats describing and showing the regional wetlands mosaic needed to restore and preserve the region's ecological health. These options will serve as the basis for a regional wetlands protection policy to assist Bay Area governments with the development of local action plans.

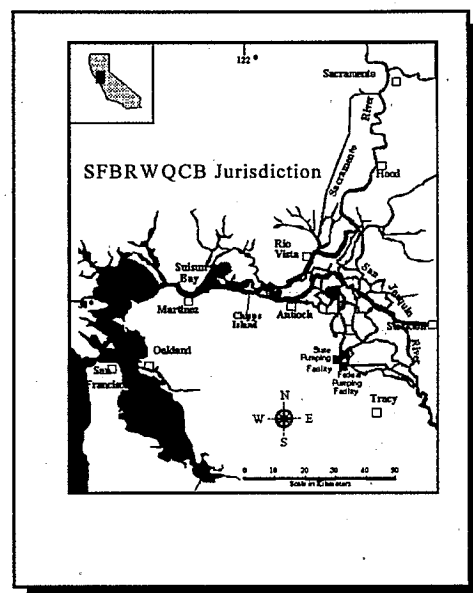
Geographic Scope: The area of study stretches from the Golden Gate to the western margin of the Delta at the confluence of the Sacramento and San Joaquin rivers.

Funding: N/A

Continuing/Sunset Date: N/A

Contact: Craig Denisoff, Resources Agency (916) 654-2753

**San Francisco Bay Regional Water Quality Control Board and San Francisco Bay Conservation and Development Commission/Regional Wetlands Management Plan:** The Comprehensive Conservation Management Plan recommended that a comprehensive wetlands management plan be prepared for the Estuary. Included in the management plan are the actions implemented under the Regulatory Pilot Program; North Bay Wetlands Protection Program; Basin Plan; Regional Wetlands Ecosystem Goals Project; and Partnership for San Pablo Baylands, and other recommended actions. The Plan employs a public process, and that policies and programs of the plan should be incorporated into appropriate documents, such as the SFBRWQCB's Basin Plan, SFBCDC's Bay Plan, local general plans, etc.



Geographical Scope: San Francisco Bay Estuary

Funded: Funding from the State and USEPA

Continuing/Sunset Date: Continuing

Contact: Peggy Olofson, SFBRWQCB (510) 286-0427

**San Francisco Estuary Project (SFEP):** The SFEP was authorized by Congress as part of a national program in the mid-1980s. The SFEP, through the work of a broad-based committee of public agency and private interest representatives, developed a Comprehensive Conservation Management Plan (CCMP) for the Bay-Delta. The CCMP focused exclusively on the Estuary's



biological needs as they related to a number of resource management issues (e.g., wetlands, land use, fisheries, etc.) and made numerous recommendations for addressing those needs. The CCMP represents a blueprint to restore and maintain the chemical, physical, and biological integrity of the Bay Delta Estuary. The CCMP was conditionally concurred with by Governor Wilson. Implementing funding legislation has not been successful in Washington. Nevertheless, the SFEP maintains a limited staff at the San Francisco Regional Water Quality Control Board and an Implementation Committee meets quarterly to facilitate CCMP implementation through the activities of other programs.

Several geographic subcommittees meet quarterly to facilitate restoration and protection activities. Their objectives are to implement the CCMP's wetlands protection actions focusing on regional wetland activities, gathering information on local implementation efforts, and educate local government and interested parties about the CCMP.

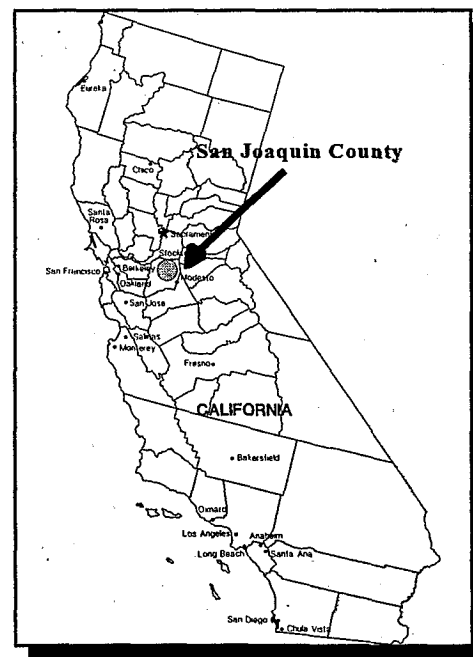
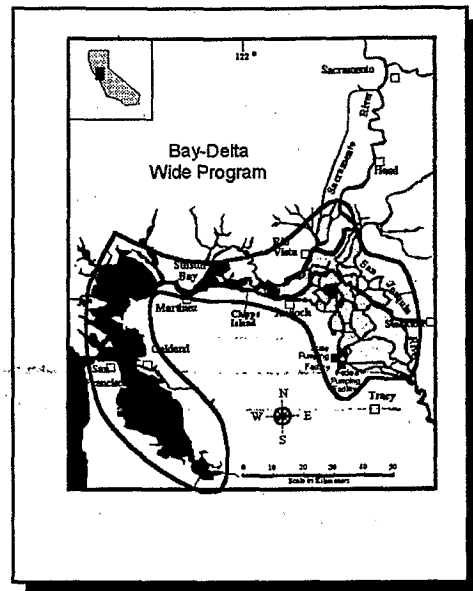
Geographic Scope: San Francisco Bay - Delta

Funding: Implementing funding legislation has not been successful in Washington. Nevertheless, the SFEP maintains a limited staff at the San Francisco Regional Water Quality Control Board. IN the 1996 fiscal year, EPA contributed \$410,000 and SFRWCB provided \$100,000 to the SFEP.

Continuing/Sunset Date: Continuing

Contact: Ron Sokolov, SFEP (510) 286-0924

**San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (Plan):** The Plan's main objective is to establish a program to conserve, protect and maintain viable populations of native special status species within San Joaquin County. The Plan coordinates mitigation and management measures so that development actions will satisfy, without duplication or unnecessary delay, applicable provisions of State, Federal and local laws. The Plan includes evaluation of the special status species, potential impacts, habitat availability, etc., in order to protect and enhance of special status species and their habitats.



Geographic Scope: San Joaquin County

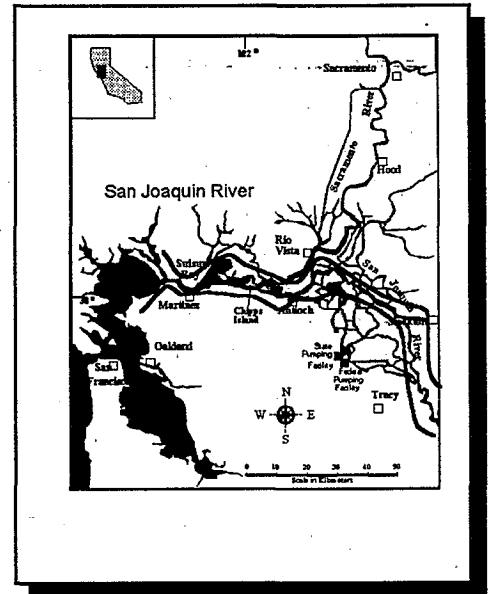
Funding: N/A

Continuing/Sunset Date: This program is anticipated to continue indefinitely, however its current permits will need to be renewed in 10 to 15 years.

Contact: Bob Mapes, DFG (916) 358-2929

**San Joaquin River Management Program (SJRMP):** This program was authorized by the Legislature in 1990. It created an advisory council and various action teams to develop and report a plan of action for addressing San Joaquin River resource needs. In 1991, the Resources Agency entered into an MOA with the USBR to provide cost-share support. The program objectives were folded into the CVPIA in 1992. In 1994, the Legislature directed implementation be coordinated by the advisory council. The Program's recommendations fall into three categories: projects, studies, and acquisitions. The 1995 final report is now available.

Geographic Scope: The area covered by the program runs from Friant Dam downstream through the northern boundary of the South Delta Water Agency just south of Victoria Canal and all other tributaries of the San Joaquin River up to the first major dam.



Funding: Historically, DWR secured approximately \$250,000 dollars from ELPF. Currently, ELPF is providing DWR with about \$200,000 dollars used primarily for administration.

Continuing/Sunset Date: The governor continued SJRMP by signing AB 3048; this extended the sunset date to 2000.

Contact: Dale Hoffman-Floerke, DWR (916) 227-7530

**Senate Bill 1065:** In 1991, Senate Bill 1065 was signed into law. SB 1065 provides supplemental guidance for SB 34 program activities to assure that these flood protection activities result in no net loss of fish or wildlife habitat. In addition, it provides \$3 million to mitigate past impacts. SB 1065 allocated the \$3 million to DFG to develop mitigation areas for SB 34 related net long-term losses of riparian, fisheries, and wildlife habitat within the legal Delta.

Geographic Scope: Statewide

Funding: Historically funds were legislated; currently funding is provided by the Department of Water Resources. This funding is anticipated to continue.

Continuing/Sunset Date: Continuing

Contact: Ed Littrell, DFG (916) 358-2929

**Sonoma Baylands Project (SBP):** Sponsored jointly by the California Coastal Conservancy and the COE, the SBP is a 320 acre tidal wetland restoration project incorporating dredged material from the Oakland harbor. The project has dual goals of doing first-class wetland restoration while finding a home for 2.5 million cubic yard of sediments from the Oakland harbor. The project seeks to determine the beneficial reuse of dredged sediment to restore subsided tidal marshlands and seasonal wetlands by raising them back to intertidal elevations.

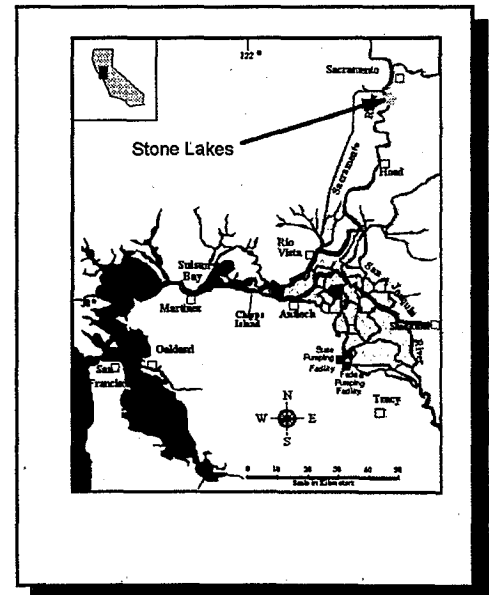
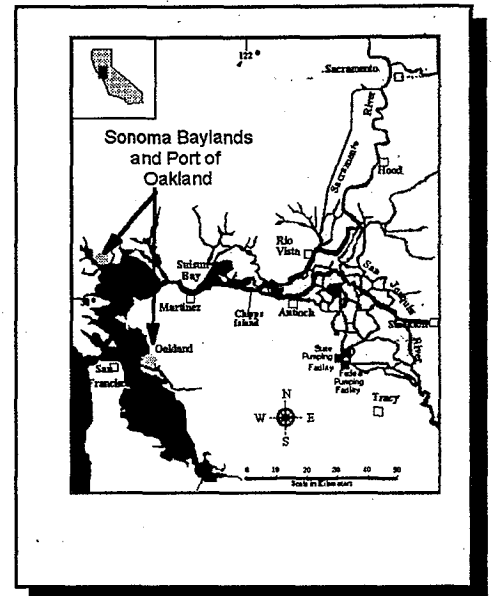
Geographical Scope: Port of Oakland and Sonoma Baylands

Funds: Total cost of the project \$7.1 million

Continuing/Sunset Date: N/A

Contact: Carl Wilcox, DFG (707) 944-5525

**Stone Lakes National Wildlife Refuge:** This project is coordinated by the USFWS in cooperation with State, county and private agencies. To date the USFWS has acquired over 800 acres of land and an additional 5,000 acres are under other public ownerships. A number of major habitat restoration projects are underway through the efforts of the USFWS and its cooperators. Negotiations with other private land owners over potential donations and acquisitions of property are also occurring. This project is envisioned to restore and protect wetland and upland habitats to benefit migratory birds, special status species, and warm water fisheries in the Stone Lake Basin. Educational and wildlife viewing opportunities will be available to the public.



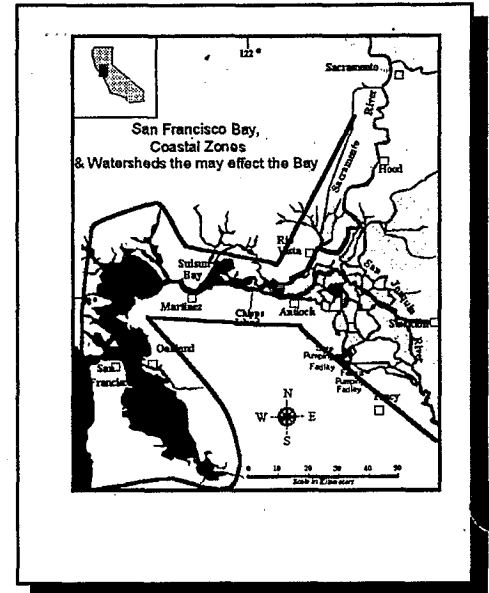
Geographical Scope: South Sacramento County

Funds: Total cost of the project \$7.1 million

Continuing/Sunset Date: Continuing

Contact: Tom Harvey, USFWS (916) 979-2085

**Striped Bass Management Project (SBMP):** The SBMP's goal is to use various measures to stabilize, restore, and then improve the striped bass fishery while not jeopardizing the continued existence of other species. The Department of Fish and Game implements this project. SBMP activities include: seeking action to minimize entrainment in water diversions, seeking beneficial Delta outflows, seeking methods of slowing the rapid transfer of water through the interior Delta channels, seeking reductions in toxic substances in the water column, seeking restrictions on channel dredging and spoil disposal in Delta waters, seeking curtailment of introductions of exotic species, reducing illegal take, monitoring the status of striped bass, maintenance of sport fishing regulations consistent with protection of the species, and managing mitigation programs involving both hatchery production of striped bass and net-pen rearing and release of striped bass salvaged at the SWP and CVP.



Geographic Scope: This program works with striped bass from the Pacific Ocean to the upper spawning and nursery grounds of the Sacramento and San Joaquin Rivers.

Funding: Funding for SBMP comes from several places; striped bass stamp funds, Federal aid to fish restoration funds, U.S. Bureau of Reclamation, and the Department of Water Resources. In addition to the above funding sources, funds are currently being received from the CVPIA. Funding from these sources is expected to continue in the future.

Continuing/Sunset Date: The SBMP is anticipated to continue indefinitely.

Contact: Don Stevens, DFG (209) 948-7800

**Striped Bass Stamp Account (Account):** The Account originated in the early 1980s from the efforts of constituent groups willing to tax themselves in order to provide money for striped bass

restoration. A stamp costing \$3.50 was required from sport striped bass anglers. Annual stamp receipts were approximately \$1.5 million. The stamp was discontinued in 1994. Expenditures have primarily been for rearing, hatchery evaluation, and for research into the causes of California's striped bass decline. Future expenditures may also include habitat restoration where appropriate. Stocking of hatchery reared striped bass was halted in 1992 because of concerns of potential predation on winter-run chinook salmon. In 1993 stocked bass formed about one-quarter of the adult striped bass population. The program started to rear striped bass salvaged at the State and Federal fish screens in net-pens anchored in the Estuary. The reared fish are released in San Pablo Bay. About 100,000 bass were released in 1995.

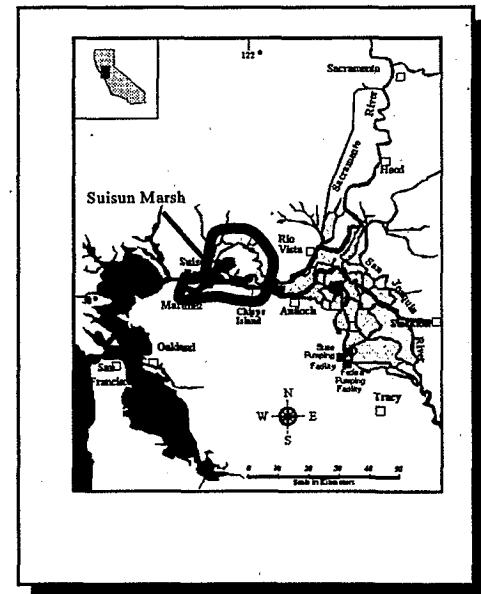
**Geographical Scope:** Statewide interest. Currently the focus is in the Sacramento-San Joaquin Estuary.

**Funds:** Funds are deposited into the Striped Bass Dedicated Account. Funds in the account are through the Striped Bass stamp revenue and mitigation money from DWR and PG&E. Currently, approximately \$2 million remains in the account. Funds are directed to striped bass restoration activities, and proposed expenditures are reviewed by the Striped Bass Stamp Advisory Committee. The stocking program has spent more than \$6 million on stocking striped bass and evaluating its effectiveness. Including anticipated expenditures for 1995-1996, the net-pen rearing portion of the program has cost about \$500,000.

**Continuing/Sunset Date:** The program has been discontinued, projects will continue until funds are depleted.

**Contact:** Don Stevens, DFG (209) 948-7800

**Suisun Marsh Diversion Screening Program:** In 1981 and 1982 Suisun Marsh entrainment studies identified 34 fish species in Montezuma Slough that were vulnerable to entrainment into unscreened diversions serving managed wetlands in the marsh. Species included chinook salmon, striped bass, and delta smelt. Based on those data, the USFWS and NMFS incorporated related conditions in a COE regional maintenance permit for Suisun Resource Conservation District and the DFG. The primary goal is to reduce entrainment of winter-run chinook salmon and delta smelt. The screening program consists of an extensive diversion assessment element and a fish screen installation element. Implementation of this screening program will also help address mitigation needs described in a DWR/DFG agreement to offset impacts associated with the



The map illustrates the proposed BART system route, which is shown as a thick black line. The route starts in the San Francisco Peninsula, passes through the Golden Gate, and extends into the Sacramento-San Joaquin River Delta. Key locations marked on the map include San Francisco, San Pablo, Suisun Bay, and various pumping facilities. A scale bar at the bottom indicates distances from 0 to 50 miles. An inset map in the top left corner shows the location of the study area within the state of California.

**Contact:** Mike Horton, USFWS (916)979-2730 or Carl Wilcox, DFG (707) 944-5525

**Tracy Fish Agreement (Agreement):** The Tracy Pumping plant Agreement was sign in June 1992. This Agreement between DFG and the USBR implements measures to reduce, offset, or replace direct losses of chinook salmon and striped bass in the Delta. Losses are caused by Tracy Pumping Plant (TPP) diversions. The Agreement includes measures to reduce losses by improving facility operations and equipment, and by replacement of fish losses through payment of specified amounts of money to carry out "mutually agreed upon programs."

Geographic Scope: Statewide

Funding: USBR has provided funding for five consecutive years (1992-1997) totaling \$6.51. The 1996 fiscal year contribution was \$1,270,000.

Continuing/Sunset Date: Continuing

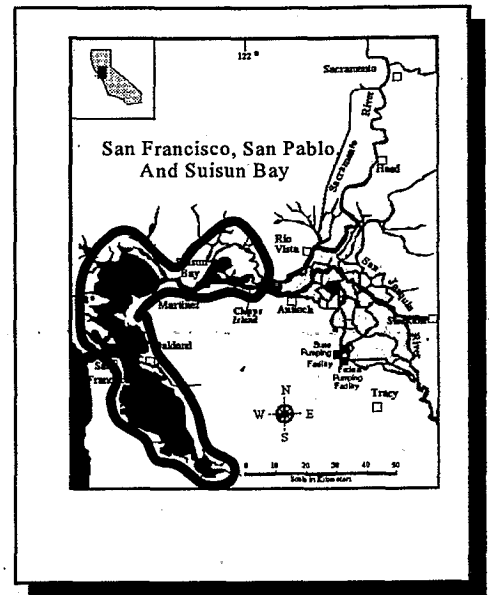
Contact: Pat Coulston, DFG (209) 948-7800

**Trinity Restoration Program:** The goal of the program is to rehabilitate the Trinity River and increase the returning number of chinook salmon and steelhead to the Trinity watershed. Efforts include the construction of the Trinity River hatchery; DFG stocking and monitoring; tagging studies; fish weirs; monitoring of bald eagles; and the Trinity Schools "Adopt a Watershed".

Geographical Scope: Trinity watershed

Funding: Initially the project was slated for \$60 million however, in 1985 the USBR was allocated \$5 million per year for ten years through the Water and Energy fund. The project expired September 1995 and was authorized for an additional three years. Twenty million dollars was allocated for the three years.

Continuing/Sunset Date: The sunset date for the project is September 1998.



**United States Department of Agriculture Farm Service Agency, Conservation Programs:** The 1996 farm bill conservation provision simplified existing conservation programs and improve their flexibility and efficiency. The United States Department of Agriculture (USDA) has several ongoing conservation programs: Conservation Reserve Program, Agricultural Conservation Program, Natural Resources Conservation Service, and the Wetland Conservation Program. All Farm Service Agency (FSA) programs are conducted in cooperation with other Federal, State and local agencies and conservation organizations.

Conservation Reserve Program (CRP) is the USDA's most ambitious conservation effort, CRP targets the most fragile farmland encourages farmers to stop growing crops on highly erodible soils and to plant a permanent vegetative cover instead. In return, the farmer receives an annual rental payment for the term of the multi-year contract. Cost-share payments are also available to help establish the permanent planting of grass, legumes, trees, windbreaks, or wildlife flora.

Agricultural Conservation Program (ACP) is the primary means for the Farm Service Agency to help farmers and ranchers carry out conservation and environmental practices nationwide. The program is designed to help alleviate soil, water, and related resources problems through cost-sharing approved conservation measures. ACP assistance is available to install a variety of soil-saving practices including: terraces, grass cover, sod waterways, and other measures to control erosion. ACP practices also help farmers reduces sediment chemicals, and livestock waste that contaminate streams and lakes.

Natural Resources Conservation Service (NRCS) provides technical assistance to land users and communities to enable them to protect and conserve soil, water, and related natural resources. The agency works through nearly 3,000 conservation districts. NRCS uses the 1890 land-grant institutions as a means of program delivery and technical assistance. NRCS is working with local soil and water conservation districts to assist communities in avoiding and correcting problems related to potable running water, waste disposal, flooding, drainage, and other natural resource concerns of minority and poor citizens.

Wetland Conservation Program (WCP) is a nationwide wetland restoration program. Goals for the WCP include 70,000 acres in 30 year easements and perpetual easements. Five thousand acres have been acquired for protection and restoration by working with the Central Valley Habitat Joint Venture. This program receives \$70 to \$100 million per year.

Geographic Scope: Nationwide

Funding: The 1996 farm bill authorizes more than \$2.2 billion dollars in additional funding for



conservation programs, extends the Conservation Reserve Program, Wetland Reserve Program, and creates new initiatives to improve natural resources on private lands.

Continuing/Sunset Date: Funding should continue through 2002.

Contact: Gene Kelly, USDA- Natural Resource Conservation, (916) 757-8215

**Upper Sacramento River Fish and Wildlife Habitat Restoration Study:** In 1994, the COE completed a reconnaissance study of the Upper Sacramento River recommending a corridor management plan for fish and wildlife habitat restoration. The local sponsor of this effort, DWR/Reclamation Board, and the resource agencies supported this effort, but recognized the need to integrate restoration with other water resources interests and demands and are working on developing a broader ecosystem management plan. The reconnaissance study was conducted on Sacramento River, and identified ten specific sites in the study area (Feather River confluence near Verona north to Red Bluff). In the interim, the COE and the State are developing a restoration plan for one of the sites identified in the reconnaissance study:



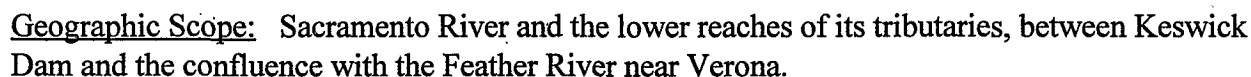
Golden State Island Restoration Project - a 200 acre site near Golden State Island will be restored. Supports goals of the North American Waterfowl Management Plan for migratory waterfowl; State of California has already acquired the project lands in support of this effort; letter of support requested at this time. Restoration benefits expected at this site include increased habitat areas to support four target species: yellow-billed cuckoo, willow flycatcher, yellow warbler, and yellow-breasted chat. New nesting habitat for Cooper's hawk and Swainson's hawk would also be provided. The riparian and wetland habitat created may provide breeding habitat for at least 96 bird and mammal species, and may provide shaded riverine aquatic habitat for salmon and steelhead. Habitat area for the valley elderberry longhorn beetle will also increase.

Geographic Scope: Sacramento River, and identified ten specific sites in the study area (Feather River confluence near Verona north to Red Bluff).

Funding: Under the 1986 Water Resources Development Act Section 1135 program (Project

Continuing/Sunset Date: Continuing. For the Golden State Island Restoration Project a statement of commitment of this additional non-federal sponsorship, by letter of support and agreement with the State, would be needed upon completion of the Project Modification Report, scheduled for August of September 1996. Implementation funds would be needed in the spring of 1998.

**Upper Sacramento River Fisheries and Riparian Habitat Management Plan (Plan):** In 1986, the Upper Sacramento River Fisheries and Riparian Habitat Advisory Council was created by legislation (SB 1086). This Council produced the Plan, and submitted it to the Legislature in January 1989. The Legislation declared it State policy to implement the 22 actions recommended by the Plan. The two highest priority actions were intended to protect, restore and manage a continuous riparian ecosystem along the Sacramento River and the lower reaches of its tributaries. The other 20 actions are intended to restore and enhance salmon and steelhead fisheries in the upper River. Riparian habitat studies began in 90-91 when options were defined. No funding was provided in 91-92. In 92-93 work resumed inventorying riparian lands and assessing boundary options for Sacramento River Riparian Conservation Area (SRRCA). The SRRCA planning, a riparian vegetation program was completed and work began on a riparian vegetation restoration program for the major tributaries. It is expected that a detailed implementation plan for the SRRCA will be developed and a final summary report produced in 95-96.



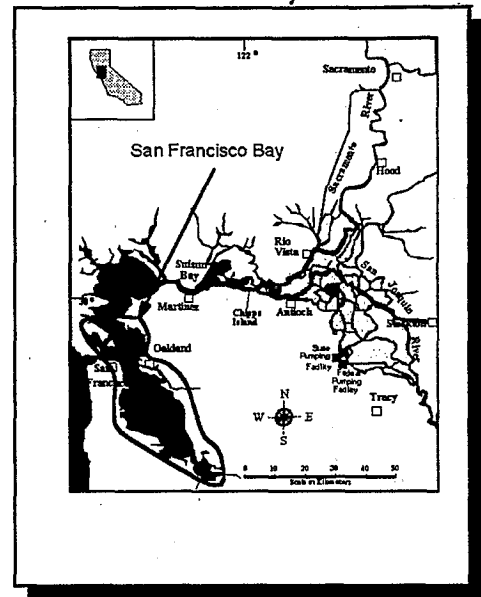
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PROGRAM

available from a variety of sources for actual construction of projects and restoration of habitat . However, these monies cannot be accessed until preliminary work and environmental documentation has been completed; activities for which it is difficult to secure funding.

Continuing/Sunset Date: 1995-1996 will be the fifth year of a six year, first phase program to develop and implement four of the 22 recommendations of the Plan (Two Riparian Habitat Acquisition and Management items, Spawning Gravel Restoration, Clear Creek Restoration).

Contact: Ralph Hinton, DWR (916) 529-7393

**U.S. Fish and Wildlife Service San Francisco Bay Program:** This Program was initiated in 1992 and is one of 13 such funded programs nationwide. Ten to 15 projects are undertaken each year, with the emphasis on "on the ground" type projects. Other projects are bringing information to decision makers and advocacy/outreach. The program networks with the San Francisco Estuary Project, Partnerships for San Pablo Baylands, San Francisco Bay National Wildlife Refuge, San Francisco Bay Joint Venture and the likes. Emphasis has been on tidal marsh restoration/enhancement but increasing focus has been on contaminant issues, introduced nuisance species, and watershed/land use. Partnerships and collaborators are sought. In 1995 four "on the ground" type projects were supported: Tolay Creek Marsh Restoration /Enhancement, Oro Loma Marsh Restoration (East Bay Parks District), Scottsdale Marsh restoration/enhancement (Novato) and Cullinan Ranch (SFBNWR).



Geographic Scope: San Francisco Bay

Funding: For the last couple of years the budget has been about \$250,000. In 1995 the four "on the ground" type projects were supported with 58% of the budget.

Continuing/Sunset Date: Continuing

Contact: Richard Morat, USFWS (916) 979-2116 ext. 334

**Wetlands Reserve Program (WRP):** The WRP is a voluntary program offering landowners a chance to receive payments for restoring and protecting wetlands on their property. Authorized

by the Food Agriculture, and Trade Act of 1990, the program provides a unique opportunity for farmers to retire marginal cropland and reap the benefits of having wetlands on their property. The program obtains easements from participating landowners and provides cost share payments for wetland restoration. The program pays farmers for safeguarding certain defined lands and for restoring and protecting wetlands. This program does require long term commitments: either 30 year easements or permanent easements, that will be purchased. The total easement may not exceed the average fair market value of the same type of agricultural land in the area. The bid may include additional costs to cover costs of restoration and long-term maintenance of the wetland. Payments may be either a lump-sum or spread over 10 years. The easement does not require the lands to be open to the public for hunting, fishing or other forms of recreation. In order to be considered for this program the lands must have the potential to contribute to Delta wetland ecosystem and meet the following criteria: 1) agricultural land with restorable wetland; 2) lands adjacent to wetlands; 3) wetlands restored under federal or State programs; 4) conservation reserve lands; and 5) riparian area. 1995 is the first year that this program has been offered nationwide.

Geographic Scope: Nationwide

Funding: The program has only been funded for one year, 1992, and the program was over subscribed. Applications were handled on a "bid" basis, with landowners submitting proposals to compete for limited funds available. California landowners submitted bid for 34,296 acres; 6,026 acres were accepted with a per-farm average of 287 acres. The federal government pays for the easement and 75% of the restoration costs; the landowner pays 25% of the restoration costs and long-term maintenance and repair. Of the California lands, 5,567 acres will be restored to emergent wetlands. The average cost of the easements in California was \$1,626 per acre, significantly higher than the \$742 per acre average payment. The program is still being run under these guidelines. Funding level will be \$67 million to enroll up to 75,000 acres nationwide. To date this program has acquired over 6,500 acres of farm land for about 7 million dollars.

Continuing/Sunset Date: Continuing

Contact: Dave Simpson, USDA (209) 946-6229

**Wildlife Conservation Board:** The Wildlife Conservation Board uses a variety of funding mechanisms to accomplish a broad variety of actions for California's fish and wildlife. Actions include protecting and restoring riparian and wetland habitat, enhancing habitat for anadromous fish, and acquiring critical fish and wildlife habitat. Many of its programs are public-private partnerships which can include farmers and other landowners, conservation organizations such as The Nature Conservancy, California Waterfowl Association and Ducks Unlimited, and local, state, and federal agencies such as the Natural Resources Conservation

Service.

Geographic Scope: Statewide

Funding: Key funding sources are the Environmental License Plate Fund; Proposition 19, Fish and Wildlife Habitat Enhancement Bond Act of 1984; Proposition 70, California Wildlife, Coastal and Park Land Conservation Fund; and Proposition 99, Cigarette and Tobacco Products Surtax Fund. For instance, for the July 1, 1994 through June 30, 1995 period the WCB provided over \$3.4 million to complete a variety of habitat development projects throughout the Central Valley. Over \$7.9 million in acquisitions were completed and approximately \$13.7 million of new acquisitions authorized.

Continuing/Sunset Date: Continuing, although future sources of funds will be required as traditional sources of funding are gradually declining and voter approved bonds are nearly depleted.

Contact: John Schmidt, (916) 445-8448

**Winter-run Chinook Salmon Recovery Plan (Plan):** This Plan was required subsequent to the ESA listing of the Winter-run. A team of experts has developed the plan at the request of the National Marine Fisheries Service, and completed a draft in mid-1995. The Plan contains seven broad goals to guide recovery efforts: (1) protect and restore spawning and rearing habitat, (2) improve survival of downstream migrants, (3) improve upstream fish passage, (4) prevent extinction through artificial propagation, (5) reduce harvest and incidental take in commercial and recreational fisheries, (6) reduce impacts of fish and wildlife management programs, and (7) improve understanding of life history and habitat requirements.

Geographic Scope: The Plan spans from the Pacific Ocean to Shasta Dam.

Funding: No specific funding is earmarked for this program.

Continuing/Sunset Date: The planning phase is anticipated to end in June 1996; the implementation plan will follow there after.

Contact: Terry Mills, DFG (916) 653-6194

**Woodbridge Ecological Reserve:** The DFG operates a 352 acre ecological reserve (2 separate parcels north 145 acres, south 207 acres) in the northeastern Delta primarily as habitat for the state listed greater sandhill crane. It currently represents the most important crane roosting area in the Delta, but also provides habitat for a wide variety of wintering shorebirds and waterfowl. This property is currently operated on a limited budget and needs substantial improvements to

the water delivery system.

**Geographic Scope:** 352 acres in the Northeastern Delta

**Funding:** This program has acquired monies from the endangered species license fund, which no longer exists. Operating and management is currently receiving funds from DFG. The likelihood for these funds to continue is declining; future funding is uncertain.

**Continuing/Sunset Date:** Woodbridge Ecological Reserve is anticipated to continue.

**Contact:** Dan Gifford, DFG (209) 369-8851

**Yolo Basin Wetlands Project:** The purpose of this project is to create and restore wetlands within the Yolo Basin; specifically Mace Ranch, Yolo Causeway, and Willow Slough adjacent to the Yolo Basin flood control bypass. It was initiated in response to an Army Corps of Engineers' proposed modification to the Sacramento River Flood Control Project. The total acreage of the project is approximately 4,800 acres, of which 3,000 acres have already been acquired by the state.

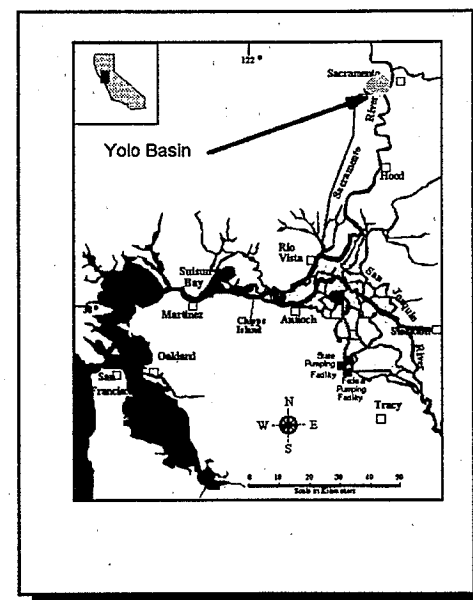
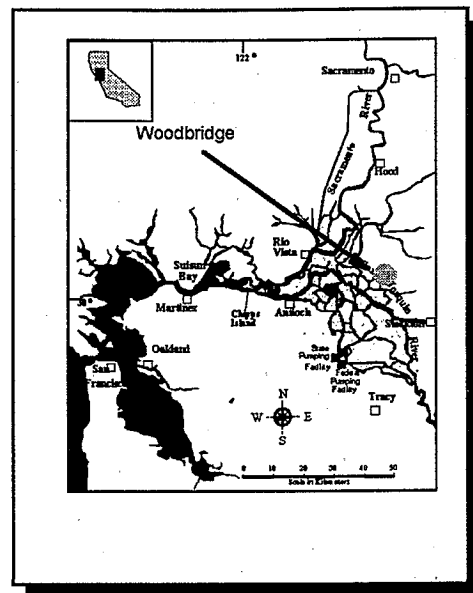
**Geographic Scope:** Mace Ranch, Yolo Causeway, and Willow Slough adjacent to the Yolo Basin flood control bypass

**Funding:** Funding is provided by Section 1135(b) of the water Resource Development Act 1986. The 1996 fiscal year contribution was \$5,920,000. DFG has purchased property and DWR will do required construction, and DFG will be responsible for operations and maintenance.

**Continuing/Sunset Date:** This program is anticipated to continue indefinitely.

**Contact:** Roger Scoonover, DFG (916) 666- 3407

**Yolo County Habitat Conservation Plan (Plan):** Primary goal of the Plan is the conservation of listed and candidate species that may occur within eight areas of the county where future



growth expected to occur. The project is still in the planning phase, though four technical reports (ecological, land use, biological, agricultural resources) were completed in April 1995.

Geographic Scope: Yolo County

Funding: Funding is appropriated through DFG mitigation fees. 1135 funding provided \$4,700,000 this fiscal year.

Continuing/Sunset Date: No sunset date is scheduled and the Plan will be reviewed and updated at regular intervals.

Contact: Roger Scoonover, DFG (916) 666-3407

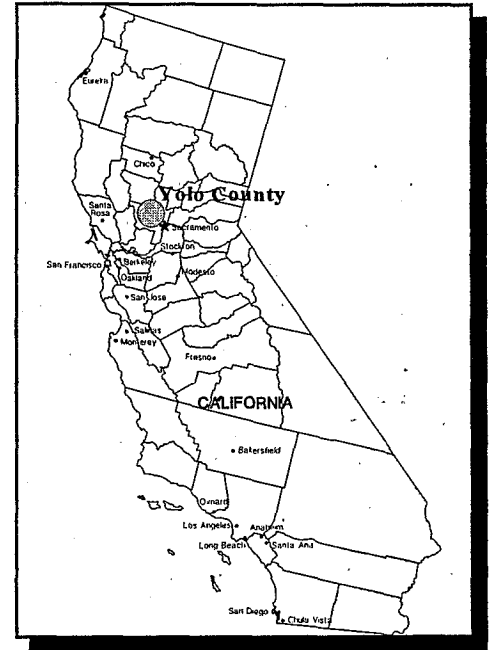
**Yuba River, Daguerre Point Dam:** To address the fish passage problems at Daguerre Point Dam, which during some flow conditions prevent chinook salmon and steelhead trout from reaching 12 miles of superior spawning habitat above the dam, the COE and the non-federal sponsor, the Yuba County Water Agency will initiate in fiscal year 1996 the development of a plan to repair/replace two fish ladders. This project is essential for improving access for anadromous fish on the Yuba River, the largest river in California without a hatchery (this system is thus especially valuable for its numbers of native fish, particularly steelhead).

Geographic Scope: Yuba River

Funding: This project is under the Water Resources Development (1986) Act Section 1135: Project Modifications for Improvement of the Environment. Modification is estimated to cost \$4.7 million, of which the Federal government will provide \$3.5 million. A statement of commitment of non-federal sponsorship, by letter of support and agreement with the Water Agency, would be needed upon completion of the Project Modification Report. Implementation funds would be needed in middle to late fiscal year 1997.

Continuing/Sunset Date: Project Modification Report scheduled for early 1997.

Contact: Rick Dreher, COE (916)557-6769



## SYSTEM VULNERABILITY

**Delta Flood Protection Act:** Serious flooding problems in 1986 in the Sacramento-San Joaquin Delta resulted in State Legislature passing the Delta Flood Protection Act of 1988 (SB 34). The SB-34 is comprised of two components: Delta Levees Maintenance Subventions Program (DLMSP) and Special Flood Control Projects (SFCP). Through the Delta Flood Protection Fund, the DLMSP provides financial assistance to local agencies for maintenance and improvement of non-Federal control project levees in the Sacramento-San Joaquin Delta. The SFCP funds allocated toward flood control projects on Bethel, Bradford, Holland, Jersey, Sherman, Thornton and Walnut Grove.

**Geographic Scope:** Sacramento-San Joaquin Delta, and Bethel, Bradford, Holland, Jersey, Sherman, Thornton and Walnut Grove.

**Funding:** Six million dollars is appropriated annually through the Delta Flood Protection Fund

**Continuing/Sunset Date:** The Delta Flood Protection Act of 1988 will sunset on January 1, 1999.

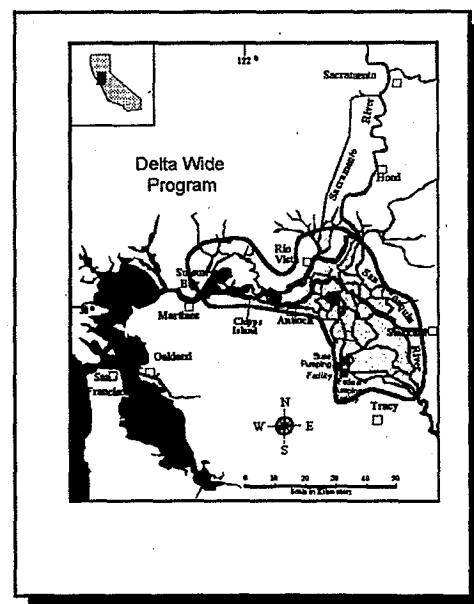
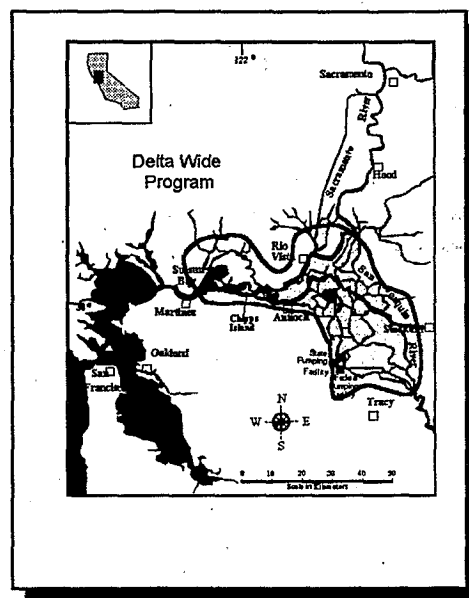
**Contact:** Curt Schmutte, DWR (916) 653-5422

**Federal Flood Control Project:** In 1917, Congress authorized the Sacramento Flood Control Project, which was completed by the U.S. Corps of Engineers in 1960. The Sacramento Flood Control Project provides flood control for a portion of the Delta. The plan was designed to include a system of levees and bypasses for transporting floodwater away from protected areas.

**Geographic Scope:** Delta

**Funding:** N/A

**Continuing/Sunset Date:** N/A





Contact: Corps of Engineers (916) 557-6769

### **Stockton Metropolitan Area, Reconnaissance**

**Investigation:** In 1994, FEMA (Federal Emergency Management Agency) released draft flood limit maps that showed areas subject to 100-year flooding in and around Stockton, to be much larger than those shown in the existing flood insurance rate maps. Issuance of new flood insurance rate maps, expected in the fall of 1997. These new flood insurance rate maps would require Stockton-area property owners and businesses in the new flood plain to purchase flood insurance. The San Joaquin Area Flood Control Agency proposes to construct improvements to Stockton's existing flood protection system to meet or exceed FEMA's revised flood protection standards. These improvements would preserve the existing flood plain insurance rate maps.



The Army Corps of Engineers has initiated a reconnaissance study of flood problems, solutions and related resource opportunities in the Stockton metropolitan area. The study will evaluate a variety of flood protection measures, including the potential for modifying operations of Farmington Dam. The Corps will also evaluate the potential for environmental restoration of streams cut off by existing flood control projects and the use of flood detention areas for both flood control and as community recreation areas.

Geographic Scope: The study area comprises Stockton and areas generally east in San Joaquin, Calaveras and Stanislaus counties.

Funding: The study is 100% Federally funded. If a feasibility alternative is identified, the study could advance to the feasibility phase, provided a non-Federal sponsor agrees to cost-share further studies with the Federal Government.

Continuing/Sunset Date: A reconnaissance report will be completed in summer 1997.

## **WATER SUPPLY**

**AB 3030, Ground Water Management:** Section 10750, et seq. of the California Water Code (AB 3030) provides a systematic procedure for an existing local agency with the powers of water replenishment district to raise revenue to pay for facilities to manage the basin (extraction, recharge, conveyance, quality). We are aware of 139 agencies that are embarked on developing an AB 3030 ground water management plan.

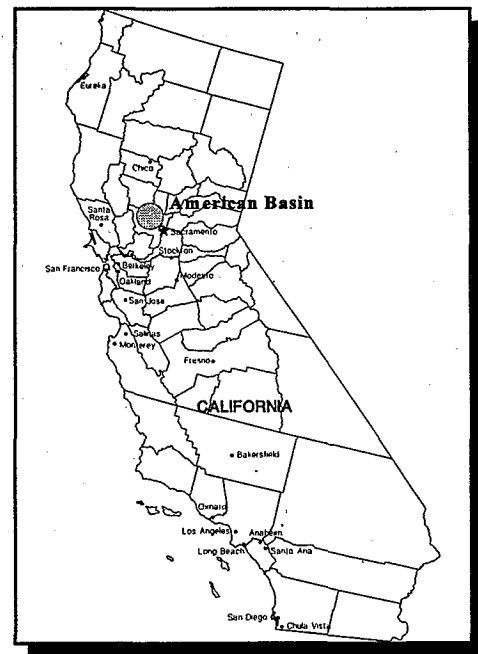
Geographic Scope: Statewide

Funding: N/A

Continuing/Sunset Date: Continuing

Contact: Carl Hauge, DWR (916) 327-8861

**American Basin Conjunctive Use Project (ABCUP):** A cooperative effort with DWR and several northern California Water Districts: Natoma Central, Pleasant Grove and South Sutter water districts to form a conjunctive use program. The term "conjunctive use" refers to the operation of a ground water basin in combination with a surface water storage and conveyance system. Elements necessary to implement an effective conjunctive use program would include a surface water supply source, a ground water basin with available storage capacity, a suitable recharge site, conveyance facilities to move surface water to the recharge site, and extraction and conveyance facilities to pump the stored ground water back into the surface water supply system. Establishment of a conjunctive use program also requires adequate institutional assurances that the water recharged into an aquifer may later be recovered from it. Two aspect of the ABCUP is to function differently during wet and dry water years to provide 45,000 AF of water: Wet years, facilities would deliver 45,000 AF of SWP water to the interested entities to recharge their ground water basin and during dry years, 45,000 AF of surface water would be available to SWP. Natoma Central and Pleasant Grove water districts would trade a diversion of 45,000 AF from Sacramento River and South Sutter Water District would trade 20,000 AF diverted from the Bear River and reroute it to the Feather River to the SWP during dry years.



Geographical Scope: American River Basin

Funding: Currently a feasibility study of the project is underway and is funded with SWP monies.

Continuing/Sunset Date: The sunset date for the feasibility study is late 1996 Contact: John Fielden, DWR (916) 653-9495

**American River Water Resources Investigation:** The purpose of the American River Water

Resources Investigation (ARWRI) is to identify water-related resource needs in the study area, formulate alternatives to meet those needs, and recommend a preferred plan. The Federal objective is to manage, develop, and protect water and related resources in an environmentally sound manner in the best interest of the American public. To help achieve ARWRI's purposes, the following objectives were established:

- Manage ground-water basins and surface water supplies to maintain beneficial uses and protect water quality;
- Provide water to meet projected (year 2030) water demands, municipal and industrial, and agricultural needs;
- Provide flows sufficient for water-oriented recreation;
- Sustain the riverine and associated biological environment;
- Be consistent with ongoing activities addressing flood protection needs.



This investigation evaluates several alternatives to meet these objectives.

**Geographic Scope:** ARWRI includes the southwestern portion of Placer County, southeastern portion of Sutter County, western portion of El Dorado County, and most of Sacramento and San Joaquin Counties.

**Funding:** There is no funding for this project. Construction and maintenance costs have been estimated for each of the proposals, however no agency or group has stepped forward to continue the process.

**Continuing/Sunset Date:** The planning report and draft Environmental Impact Report and Environmental Impact Statement were completed in January 1996.

**California Irrigation Management Information System (CIMIS):** CIMIS is a network of more than 80 computerized weather stations located at key agricultural and municipal sites throughout California. The program was developed by DWR and the University of California to help agricultural growers and landscape managers improve irrigation efficiency. Improvements in agricultural and landscape irrigation can mean savings in water, energy, and capital outlay costs for water purveyors. CIMIS is a free service which can improve irrigation efficiency by helping irrigation managers develop water budgets for determining when to irrigate and how much water to apply.

**Geographic Scope:** Statewide

**Funding:** Currently all new stations are purchased by a local cooperator (individual or water district).

**Continuing/Sunset Date:** Continuing

**Contact:** Mark Rivera, DWR (916) 277-7603

**California Water Code:** Twenty-two kinds of districts or local agencies are identified in the California Water Code with specific statutory provisions to manage surface water. Some of these agencies also have statutory authority to impose some forms of ground water management. Some of the agencies have done so; others have not.

**Geographic Scope:** Statewide

**Funding:** N/A

**Continuing/Sunset Date:** Continuing

**Contact:** Carl Hauge, DWR (916) 327-8861

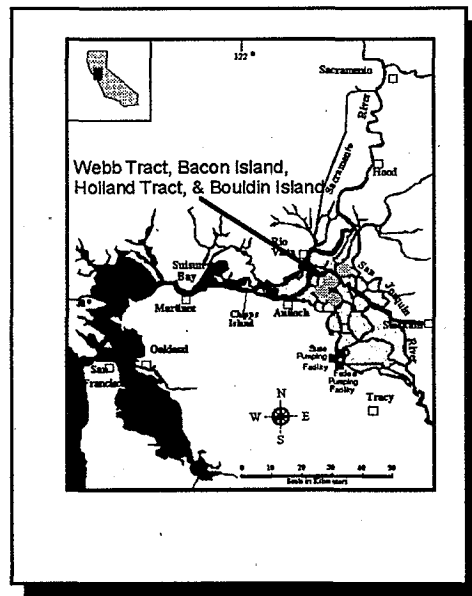
**Delta Wetlands Project (DWP):** The DWP is a private initiative to utilize four Delta islands for water storage and habitat development. The project proponents would seek to market the water they store or assist in water transfers. Two islands, Webb Tract and Bacon Island, totaling approximately 11,000 acres would be used as reservoir islands. Holland Tract and Bouldin Island, totaling 9,000 acres, would be managed for a diverse assemblage of wildlife including greater sandhill crane, Swainson's hawk, and wintering waterfowl.

**Geographic Scope:** Four Delta islands, Webb Tract, Holland Tract, Bouldin Island and Bacon Island

**Funding:** Funding, past and present, comes from private sector financing.

**Continuing/Sunset Date:** DWP is currently running with a 50 year contract that they anticipate to renew.

**Contact:** John Winther, DWP (510) 283-4216



**Department of Water Resources' Water Conservation Branch:** The Department of Water Resources Water Conservation Branch is staffed with 14 people who address both urban and agricultural water conservation. Currently, efforts to promote agricultural water conservation include projects to reduce agricultural drainage and to complete the memorandum of agreement concerning agricultural irrigation practices. In the case of urban water users this Department is working with local agencies to help implement the Urban Best Management Practice MOU and to collect information concerning conservation oriented water rate structures. Programs that are not statewide are: the Mobile Labs which operate in San Diego, Riverside, Ventura, Santa Barbara, Kern, Monterey and Stanislaus counties; and the Flexible Water Delivery program which is a training program at Cal Poly San Luis Obispo.

Geographic Scope: Statewide

Funding: Water Conservation Office budget \$2,983,000. This budget does not include approximately \$200,000 in one-time grants or \$500,000 in cost-sharing from local cooperators.

Continuing/Sunset Date: Continuing

Contact: Ed Craddock, DWR (916) 327-1655

**Interim South Delta Program:** The ISDP is a joint project between the DWR and USBR. The purpose of this program is to improve water levels and circulation in south Delta channels for local agricultural diversions; to improve the south Delta hydraulic conditions; and to increase diversions into Clifton Court Forebay in order to maximize the frequency of full pumping capacity at the Banks Pumping Plant.

The preferred project's construction areas are located throughout the south Delta. The proposed fish barrier is located at the head of Old River, near the San Joaquin River. The flow control structures are located on Grant Line Canal, Old River near the Delta Mendota Canal, and on Middle River near Victoria Canal/North Canal. The proposed intake structure is located at the northeastern corner of Clifton Court Forebay, adjacent to West Canal and Old River. The dredging is located between Clifton Court Forebay and North Victoria Canal.

This project would satisfy the no net loss goals through the acquisition of acreage to develop wildlife habitat and possible wetland habitat.

Geographic Scope: South Delta: head of Old River, near the San Joaquin River; Grant Line Canal, Old River near the Delta Mendota Canal, Middle River near Victoria Canal/North Canal, northeastern corner of Clifton Court Forebay, and dredging is located between Clifton Court Forebay and North Victoria Canal.

**Funding:** The ISDP is funded by the State Water Project. Funding for fiscal year 95/96 is projected to be \$2.31 million. Funding will continue at similar levels in fiscal year 96/97, and is likely to continue in 97/98.

**Continuing/Sunset Date:** This program is anticipated to continue at least through June, 2003

**Contact:** Mike Ford, DWR (916) 653-8384

**Low Interest Water Conservation Loan Program:** The Department of Water Resources administers low interest water conservation loan program funded under three bond acts: Water Conservation Bond Law of 1988; Water Conservation and Water Quality Bond Law of 1986 and; the Clean Water Bond Law of 1984. The water conservation projects funded under these programs typically involve the replacement of leaking water mains, concrete lining of irrigation, canals, and piping irrigation ditches.

**Geographic Scope:** Statewide

**Funding:** Water Conservation Bond Law of 1988 (Proposition 82 - \$60 million; Water Conservation and Water Quality Bond Law of 1986 (Proposition 44-\$75 million) and; the Clean Water Bond Law of 1984 (Proposition 25-\$10.5 million).

**Continuing/Sunset Date:** Continuing

**Contact:** Dan Otis, DWR (916) 327-1667

**Model Urban Landscape Ordinance, California Code, Chapter 7 (AB 325):** Provides a framework ordinance for efficient landscape irrigation. The model ordinance contains provisions for the use of recycled water supplied through dual distribution systems.

**Geographic Scope:** Statewide

**Funding:** Total budget in the Water Conservation office is Leak detection, \$106,000; Landscape, \$281,000; Water Management Planning, \$401,000; Conservation Information, \$185,000; Commercial Industrial, \$233,000; and Urban Water Conservation, \$1,206,000.

**Continuing/Sunset Date:** Continuing

**Contact:** Ed Craddock, DWR (916) 327-1655

**Reclaimed Water: Nonpotable Uses, California Code, Chapter 553 (AB 174):** Declares the use of potable domestic water for Nonpotable purposes, including cemeteries, golf courses,

parks, highway landscaped areas, and industrial uses, to be a waste or unreasonable use of such water when suitable, reasonable-cost reclaimed water is available.

Geographic Scope: Statewide

Funding: Total budget in the Water Conservation Branch is \$2,983,000.

Continuing/Sunset Date: Continuing

Contact: Steve Kasower, DWR (916) 327-1666

**Reclaimed Water: Toilet Flushing, California Code, Chapter 723 (AB 1698):** Expands water code section and authorizes a public agency to require the use of reclaimed water for toilet and urinal flushing in nonresidential structures, if it is of adequate quality and obtainable at a reasonable cost.

Geographic Scope: Statewide

Funding: Total budget in the Water Conservation Branch is \$2,983,000.

Continuing/Sunset Date: Continuing

Contact: Ed Craddock, DWR (916) 327-1655

**Sanitary Districts: Water Reclamation, California Code, Chapter 306 (AB 1015):** Enables sanitary districts to participate in bond/loan programs and authorizes DWR to assist sanitary districts in applying for necessary permits for cost-effective water reclamation facilities; requires DWR to confer and cooperate with the applicants during the application and approval process.

Geographic Scope: Statewide

Funding: Total budget in the Water Conservation Branch is \$2,983,000.

Continuing/Sunset Date: Continuing

Contact: Steve Kasower, DWR (916) 327-1666

**Sacramento Valley Conjunctive Use Program:** Identify, evaluate and develop conjunctive use projects in the Sacramento Valley to provide additional water supply for the State Water Project. A completed project feasibility studies has been done for: Eastern Yolo County, Yolo Bypass and Putah Sinks area; Colusa Basin; and Butte Basin. The Western Canal Water District and Richvale Irrigation have moved forward into a test program. There is near completion of the Chico M&T Ranch project located between Chico and Sacramento River.

**Geographic Scope:** Sacramento Valley

**Funding:** SWP Funded. FY95-96; \$1.8 million and for FY96-97; \$2.3 million.

**Continuing/Sunset Date:** Continuing

**Contact:** John Fielden, DWR (916) 653-9495

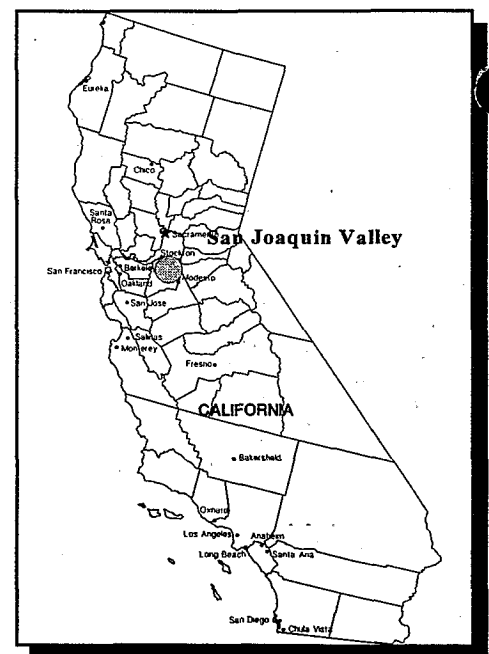
**San Joaquin Valley Conjunctive Use Program:** Currently, the program is conducting a reconnaissance of potential conjunctive use projects in the northern San Joaquin Valley to provide additional water supply for the State Water Project. No level of activity is expected in 1996.

**Geographic Scope:** Northern San Joaquin Valley; north of Merced County

**Funding:** No significant budget. Due to the small effort occurring for this program little funding is needed therefore funding for the program is under the Sacramento Valley Conjunctive Use Program.

**Continuing/Sunset Date:** Continuing

**Contact:** John Fielden, DWR (916) 653-9495



**Senate Bill 900: Water Resources and Delta Restoration Act of 1996:** SB 900 proposes to place on the November 1996, statewide ballot, a general obligation bond measure. SB 900 is designed to provide a more reliable water system for the state, with





Geographical Scope: Statewide

Funded: In planning stages; SWP funded.

Continuing/Sunset Date: Continuing

Contact: Mark Cowin, DWR (916)653-8170

**The Agricultural Water Management Planning Act, Water Code Section 10800:** The Act mandates agricultural water supply of greater than 50,000 acre feet of water to submit a plan to DWR Water Conservation Branch addressing whether there are significant opportunities to save water.

Geographic Scope: Statewide

Funding: Water Conservation Office budget \$2,983,000. The Agricultural Water Conservation receives \$1,777,000.

Continuing/Sunset Date: Continuing

Contact: Ed Craddock, DWR (916)653-9493

**The Agricultural Water Suppliers Efficient Management Practices Act Water Code Section 10900:** The Act requires DWR to establish a task force to review efficient agricultural practices. Currently, members of the committee are working on a memorandum of Understanding that will promote efficient irrigation practices.

Geographic Scope: Statewide

Funding: Water Conservation Office budget \$2,983,000. The Agricultural Water Conservation receives \$1,777,000; CIMIS, \$669,000; Mobile Labs, \$100,000; Flexible Water Delivery, \$189,000; Conservation Information, \$154,000; Drainage Source Control, \$665,000.

Continuing/Sunset Date: Continuing

Contact: Ed Craddock, DWR (916)653-9493

**Urban Best Management Practices Memorandum of Understanding (BMP-MOU):** About 125 urban water suppliers have signed an MOU with public interest groups and environmental organizations, pledging the suppliers to voluntarily implement 16 water conservation measures called Best Management Practices at specific levels over a ten-year term ending in 2001. The

MOU also forms an organization of signatories called the California Urban Water Conservation Council. This council reports annually to the State Water Resources Control Board on the status of implementation of the BMP's.

Geographic Scope: Statewide

Funding: DWR and USBR are signatories of the MOU. However, most funding comes from the more than 125 water retailers and wholesalers who implement these measures at a local level. Funds are also received from Urban Water conservation, \$1,206,000; Leak Detection, \$106,000; Landscape, \$281,000; Water Management Planning, \$401,000; Conservation Information, \$185,000; and Commercial Industrial, \$233,000.

Continuing/Sunset Date: The MOU expires in 2001, but implementation of conservation measures is expected to continue.

Contact: Ed Craddock, DWR (916) 327-1655

**Urban Water Management Planning Act, California Water Code, Section 10610 et seq.:**

The Act requires urban water suppliers serving more than 3,000 customers or more than 3,000 AF per year, to prepare Urban Water Management Plans and update them every five years. Plans must include an analysis of costs and benefits of conservation measures, a description of water shortage contingency planning, and the potential use of reclaimed water.

Geographic Scope: Statewide

Funding: Total budget in the Water Conservation office for Urban Water Conservation is \$1,206,000; Leak detection; \$106,000; Landscape, \$281,000; Water Management Planning, \$401,000; Conservation Information, \$185,000; Commercial Industrial, \$233,000.

Continuing/Sunset Date: Continuing

Contact: Deborah Braver, DWR (916)327-1770

**Water Recycling Act of 1991, California Code, Chapter 187 (AB 673):** This act establishes a statewide goal of recycling 700,000 acre-feet of water by the year 2000, and one million acre-feet by 2010; defines "recycled water" as a valuable resource; and requires regional water quality control boards to consider, when establishing water quality objectives, the need to develop and use recycled water.

Geographic Scope: Statewide

**Funding:** Water Conservation Budget is \$2,983,000.

**Continuing/Sunset Date:** Continuing

**Contact:** Steve Kasower, DWR (916)327-1666

## WATER QUALITY

**Bay Area Pilot Project:** The primary objectives of the Pilot Project is to streamline the permitting process by consolidating the 404, 401, and BCDC permit programs. This includes: assessing the feasibility of state assumption of Section 404 permitting; streamlining the permitting process; and developing an improved permitting process that will provide better service to applicants. The lead agency is SFBRWQCB; BCDC and USEPA are participating agencies.

**Geographic Scope:** BAPP can potentially affect all wetlands and water under SFBRWQCB jurisdiction including North and South Bay Area and the coastal drainage.

**Funding:** Funding comes from the State of California (in-kind/dollars) and USEPA grants.

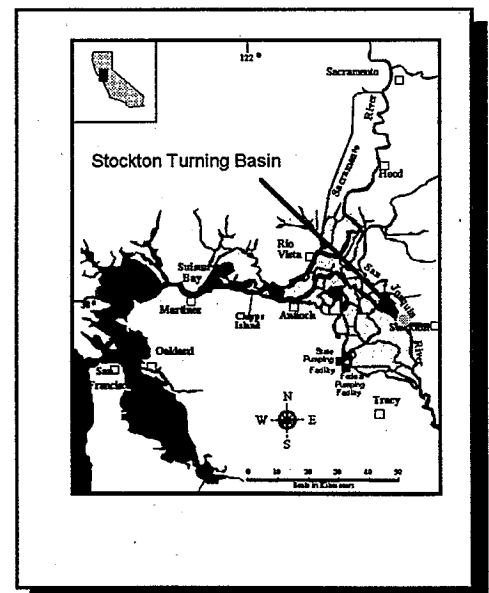
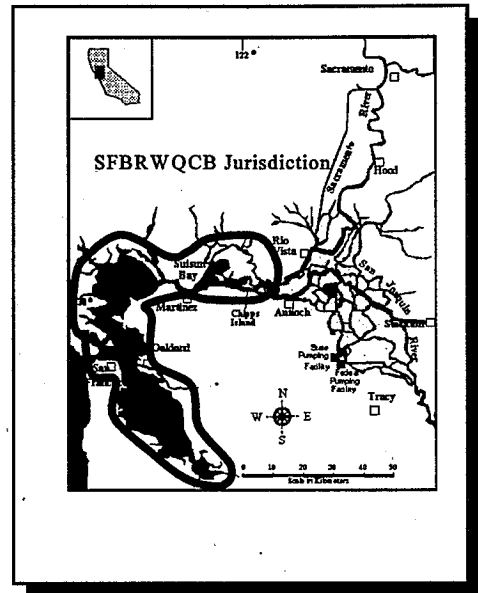
**Continuing/Sunset Date:** Continuing

**Contact:** Peggy Olofson, SFBRWQCB (510)286-0427

**Corps of Engineers Stockton Turning Basin Bubbler:** Since the fall of 1993, the COE has installed and operated a bubbler device in the area of the Stockton turning Basin to address low Dissolved Oxygen (DO) levels between September and November. When the DO is less than 5.2 at any one of eight monitoring locations, the COE in coordination with the USFWS, operates the bubbler to improve DO levels.

**Geographic Scope:** Stockton Turning Basin

**Funding:** Initial funding for the construction of the Stockton

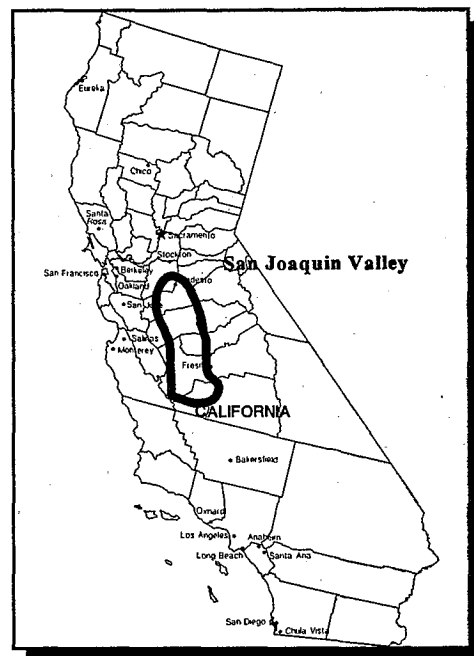


Bubbler came from Federal funds. Currently, the Corp is in charge of operations and management. However, they are in the process of turning over operations and maintenance responsibilities to the Port of Stockton.

Continuing/Sunset Date: The Stockton Turning Basin Bubbler does not have a sunset date. However, the life expectancy of the bubbler itself is anticipated to be 50 years.

Contact: Peter Valentine, COE (916) 557- 6618

**Department of Water Resources' Drainage Programs:** As part of the interagency program, DWR has drainage related activities: collecting data, reducing drainage, treating drainage, and construction in evaporation ponds. DWR has continued its cooperative, data collecting studies with USGS on the occurrence, movement, and settlement of selenium in drainage problem areas. Additionally, DWR continues demonstrations and educational programs to promote the practice of improved irrigation and drainage management techniques. A pilot project using bacteria to remove selenium from drainage water, is cooperatively funded by DWR, USBR and conducted by California State University's Fresno Foundation. Westlands Water District provides and project related services to this pilot program. DWR continues its effort to develop acceptable criteria for designing, constructing, operating, and managing evaporation ponds to minimize impacts on wildlife and ground water.



Geographic Scope: San Joaquin Valley/ Tulare Basin

Funding: N/A

Continuing/Sunset Date: N/A

Contact: Fawzi Karajeh, DWR (916) 327-1828

**Long Term Management Strategy (LTMS):** The objectives of LTMS are to:

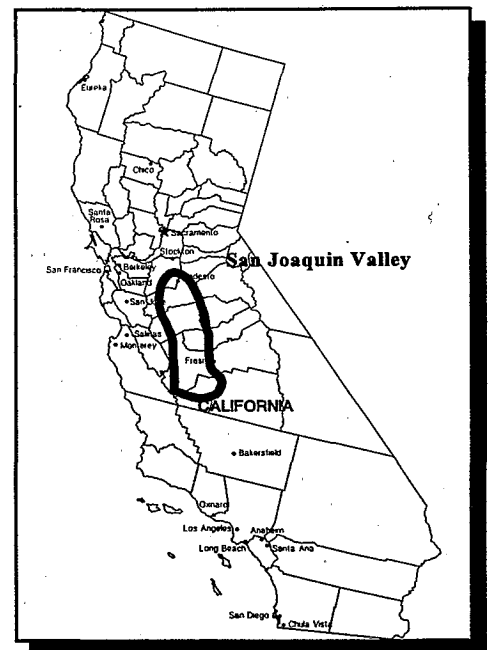
- Coordinate the efforts of responsible agencies regarding dredging activities in the San Francisco Bay and estuary, including activities to reduce the contaminant flow into sediments;
- Identify an array of acceptable sites for disposal of material dredged from the estuary.

- Promote the reuse of dredge materials, whenever it is shown that there is need for the material and placement can be done in an environmentally acceptable manner.
- Describe State, Federal, and local authority, criteria, policies, and protocols for dredging and the disposal of dredge materials.

**Funding:** Funding comes from the Corps, USEPA, and the State of California (in-kind). The USEPA contributed \$160,000 in the 1995 fiscal year.

**Contact:** Elizabeth White, EPA (415) 744-1988

- ▶ establish a continuing, coordination structure;
- ▶ define and prioritize implementation needs;
- ▶ identify Federal, State, local, and private implementation roles;
- ▶ recommend implementation actions; and
- ▶ seek agreement of involved parties.



The Program will use recommendations set by the San Joaquin Valley Drainage Program. Of the 0.9 -1.05 acre foot per acre potential drainage, 0.3 acre foot per acre is estimated to percolate through the Corcoran Clay layer. the remainder will be managed by drainage reduction actions described below.

*Source Control*-- improve on-farm irrigation management to reduce the annual volume of deep percolation or subsurface drainage.

*Drainage Reuse*--reuse drainage water on salt tolerant crops, trees, and halophytes.

*Evaporation Systems*--improve evaporation pond management and monitoring, develop new technologies, and address eventual closure of existing ponds.

*Land Retirement*--stop irrigating lands with poor subsurface drainage and shallow ground water with high contaminant levels; where drainage cannot be managed safely.

*Ground Water Management*-- pump water of suitable quality for irrigation or wildlife habitat from deeper ground water bearing zones in the semi confined aquifer to lower the shallow water table.

*Discharge to San Joaquin River*--control and limit discharge of drainage water while meeting water quality objectives for the river.

*Protection and Restoration of Fish and Wildlife Habitat*-- provide fresh water supplies to substitute for contaminated for drainage water previously used on wetlands.

*Institutional Change*-- implement tiered water pricing, improved water delivery schedules and water transfers, form regional drainage management organizations

Geographic Scope: The west side of the San Joaquin Valley.

Funding: The SJVDIP does not have its own funding or central staff. Eight participating agencies (USBR, U.S. Department of Agricultural Natural Resource Conservation, USFWS, USGS, DWR, DFG, DFA, and SWRCB) have agreed to coordinate their budget and programs to help implement the recommended SJVDIP report. Funding projections are difficult to make, however participating agencies have agreed to fund a coordinator until 1997.

Continuing/Sunset Date: N/A

Contact: Manucher Alemi, DWR (916) 327-1630  
E-mail: malemi@water.ca.gov

**Suisun Marsh Preservation Agreement (SMPA):** The SMPA protects the brackish nature of Suisun Marsh by ensuring that USBR and DWR provide a dependable supply of adequate quality water for the Marsh. Minimum water quality standards for the Marsh are defined by the SMPA. The DFG, DWR, USBR and the Suisun Resource Conservation District signed the SMPA in

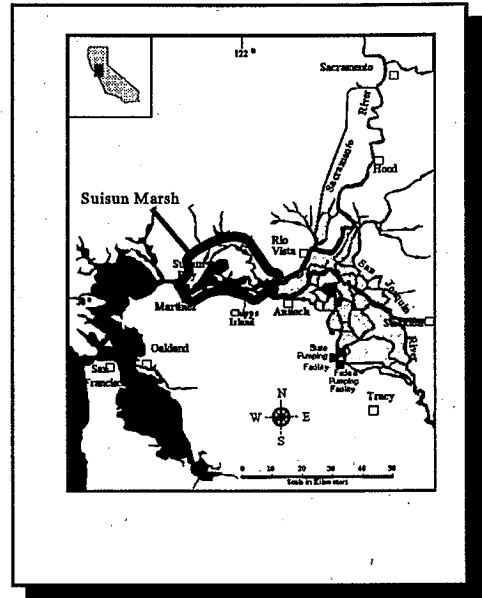
1987; this defines USBR and DWR's obligations. To complete the remainder of DWR's and USBR's obligations, potential facilities/wetland improvements are being evaluated.

Geographic Scope: Suisun Marsh

Funding: DWR and USBR are responsible for all costs associated with the SMPA. Thus far, DWR has supplied up-front costs totaling \$72,029,653 (1968 through 1995). Under State Assembly Bill 1442, the General Fund reimbursed DWR 13.1% of the up-front costs, USBR has paid 51.8%, and DWR has paid the remaining 35.1% in reimbursements.

Continuing/Sunset Date: This program is anticipated to continue indefinitely.

Contact: Frank Wernette, DFG (209) 948-7800





# APPENDIX A

## Related Programs and Associated Core Actions

Projects / Programs		Protect Existing Shallow Water Habitat	Protect Existing Riverine Habitat	Protect Existing Riparian Habitat	Improve Riparian Habitat	Improve degraded Riparian Habitat	Protect & Enhance Existing Wetlands	Expand Wetlands Acquisition Programs	Encourage Wildlife Friendly Ag Practices	Preserve Ag Land Uses Providing Habitat	Ballast Water Release Regulations	Improve Border Inspection Practices	Improve Flows & Temperatures in Upstream Habitats	Improve Gravel Mining Practices	Improve Fish Passage at Upstream Dams or other barriers	Modify Natural Barriers to Improve Fish Passage	Livestock Management in Riparian Habitats	Revegetate Degraded Riparian Habitats	Use real-time Monitoring & Adaptive Management	Install Screens on In-Delta Diversions	Install or Upgrade Screens on Upstream Diversions	Evaluate Acoustic Barriers	Operate Fish Barrier on San Joaquin at Merced River	Modify Hatchery Operation to Reduce Effects on Wild Fish	Improve Commercial Take of Anadromous Fish	Manage Water Resources Data & Info for the Bay-Delta Sy	Manage Riparian Zones to Protect Water Quality
Bay Area Wetlands Planning Group		X																									
	Cache Creek Corridor Restoration Plan					X		X																		X	X
California Wetland Riparian Geographic Information System Project *	California Wetland Riparian Association						X		X	X							X										
	California Wetland Riparian Association																										
Category III Program *	Central Valley Habitat Joint Venture	X	X	X	X	X	X	X	X	X					X	X		X								X	X
	Coastal Conservancy *			X	X		X	X	X	X																	
Central Valley Project Improvement Act Fish & Wildlife Restoration *	Central Valley Project Improvement Act Fish & Wildlife Restoration *												X		X				X						X		
	Central Valley Project Improvement Act Anadromous Fish Screen Program *	X							X	X										X							
Central Valley Project Improvement Act Anadromous Fish Restoration Program *	Central Valley Project Improvement Act Anadromous Fish Restoration Program *	X	X	X	X	X							X														
	Commercial Ocean Fishing Regulation																								X		

1 \* are on-going projects.

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Projects / Programs	Protect Existing Shallow Water Habitat	Protect Existing Riverine Habitat	Protect Existing Riparian Habitat	Improve Riparian Habitat	Improve degraded Riparian Habitat	Protect & Enhance Existing Wetlands	Expand Wetlands Acquisition Programs	Encourage Wildlife Friendly Ag Practices	Preserve Ag Land Uses Providing Habitat	Ballast Water Release Regulations	Improve Border Inspection Practices	Improve Flows & Temperatures in Upstream Habitats	Improve Gravel Mining Practices	Improve Fish Passage at Upstream Dams or other barriers	Modify Natural Barriers to Improve Fish Passage	Livestock Management in Riparian Habitats	Revegetate Degraded Riparian Habitats	Use real-time Monitoring & Adaptive Management	Install Screens on In-Delta Diversions	Install or Upgrade Screens on Upstream Diversions	Evaluate Acoustic Barriers	Operate Fish Barrier on San Joaquin at Merced River	Modify Hatchery Operation to Reduce Effects on Wild Fish	Improve Commercial Take of Anadromous Fish	Manage Water Resources Data & Info for the Bay-Delta Sy	Manage Riparian Zones to Protect Water Quality
Ducks Unlimited VALLEY CARE Program *								X	X																	
Fall Head of Old River Barrier *												X														
Governor's California Wetland Conservation Policy *						X	X																			
Grizzly Slough Wildlife Area *				X	X		X										X									
Inland Wetlands Conservation Program *							X																			
Interagency Ecological Program *												X		X				X	X	X	X	X	X	X	X	X
Introduced Aquatic Plant Species Control										X	X															
Introduced Aquatic Species Control											X															
Medford Island Multi-Species Protection and Enhancement Project *				X	X	X	X																			
Montezuma Wetlands Project *						X																				
National Estuarine Reserve Research System *																		X							X	
North Bay Initiative								X	X																	

Projects / Programs	Protect Existing Shallow Water Habitat	Protect Existing Riverine Habitat	Protect Existing Riparian Habitat	Improve Riparian Habitat	Improve degraded Riparian Habitat	Protect & Enhance Existing Wetlands	Expand Wetlands Acquisition Programs	Encourage Wildlife Friendly Ag Practices	Preserve Ag Land Uses Providing Habitat	Ballast Water Release Regulations	Improve Border Inspection Practices	Improve Flows & Temperatures in Upstream Habitats	Improve Gravel Mining Practices	Improve Fish Passage at Upstream Dams or other barriers	Modify Natural Barriers to Improve Fish Passage	Livestock Management in Riparian Habitats	Revegetate Degraded Riparian Habitats	Use real-time Monitoring & Adaptive Management	Install Screens on In-Delta Diversions	Install or Upgrade Screens on Upstream Diversions	Evaluate Acoustic Barriers	Operate Fish Barrier on San Joaquin at Merced River	Modify Hatchery Operation to Reduce Effects on Wild Fish	Improve Commercial Take of Anadromous Fish	Manage Water Resources Data & Info for the Bay-Delta Sy	Manage Riparian Zones to Protect Water Quality
North Bay Wetlands Protection Program *	X		X	X		X																				
Northern California Streams Sacramento River Fish Migration		X	X	X	X									X	X											
Partnership for the San Pablo Baylands *	X					X	X																			
Port of Sacramento Mitigation Bank *	X	X	X	X	X			X	X																	
Prospect Island Fish and Wildlife Habitat Restoration Project *				X	X	X																				
Putah Creek, South Fork Preserve *			X	X	X	X																				
Resources Agency Conservation Banking Policy *	X	X	X	X	X	X	X																			
Riparian Habitat Joint Venture			X	X	X																					
Sacramento-San Joaquin Delta Special Study																										
Sacramento Spring-run Chinook Salmon Effort												X														
Salmon and Steelhead Hatchery Program in the Central Valley *																										
San Francisco Bay National Wildlife Refuge	X	X	X	X	X	X	X	X																		

Projects / Programs	Protect Existing Shallow Water Habitat	Protect Existing Riverine Habitat	Protect Existing Riparian Habitat	Improve Riparian Habitat	Improve degraded Riparian Habitat	Protect & Enhance Existing Wetlands	Expand Wetlands Acquisition Programs	Encourage Wildlife Friendly Ag Practices	Preserve Ag Land Uses Providing Habitat	Ballast Water Release Regulations	Improve Border Inspection Practices	Improve Flows & Temperatures in Upstream Habitats	Improve Gravel Mining Practices	Improve Fish Passage at Upstream Dams or other barriers	Modify Natural Barriers to Improve Fish Passage	Livestock Management in Riparian Habitats	Revegetate Degraded Riparian Habitats	Use real-time Monitoring & Adaptive Management	Install Screens on In-Delta Diversions	Install or Upgrade Screens on Upstream Diversions	Evaluate Acoustic Barriers	Operate Fish Barrier on San Joaquin at Merced River	Modify Hatchery Operation to Reduce Effects on Wild Fish	Improve Commercial Take of Anadromous Fish	Manage Water Resources Data & Info for the Bay-Delta Sy	Manage Riparian Zones to Protect Water Quality
San Francisco Bay Regional Ecosystem Habitat Goals																										
San Francisco Bay Joint Venture						X	X																			
San Francisco Estuary Project *	X	X	X	X	X	X	X																			
San Joaquin County Multi-Species Habitat Conservation and Open Space Plan *	X	X	X	X	X	X	X										X									
San Joaquin River Management Program		X	X	X	X							X					X									
Sonoma Baylands Project						X	X																			
Stone Lakes National Wildlife Refuge *				X	X	X	X																	X		
Striped Bass Management Project *										X									X	X	X					
Striped Bass Account																							X			
Suisun Marsh Diversion Screening Program *																			X	X						
Suisun Marsh Preservation Agreement																										
Tidal Wetlands Species Recovery Plan *						X																				

5 \* are on-going projects.

Projects / Programs	Protect Existing Shallow Water Habitat	Protect Existing Riverine Habitat	Protect Existing Riparian Habitat	Improve Riparian Habitat	Improve degraded Riparian Habitat	Protect & Enhance Existing Wetlands	Expand Wetlands Acquisition Programs	Encourage Wildlife Friendly Ag Practices	Preserve Ag Land Uses Providing Habitat	Ballast Water Release Regulations	Improve Border Inspection Practices	Improve Flows & Temperatures in Upstream Habitats	Improve Gravel Mining Practices	Improve Fish Passage at Upstream Dams or other barriers	Modify Natural Barriers to Improve Fish Passage	Livestock Management in Riparian Habitats	Revegetate Degraded Riparian Habitats	Use real-time Monitoring & Adaptive Management	Install Screens on In-Delta Diversions	Install or Upgrade Screens on Upstream Diversions	Evaluate Acoustic Barriers	Operate Fish Barrier on San Joaquin at Merced River	Modify Hatchery Operation to Reduce Effects on Wild Fish	Improve Commercial Take of Anadromous Fish	Manage Water Resources Data & Info for the Bay-Delta Sy	Manage Riparian Zones to Protect Water Quality
Tracy Fish Agreement *																										
Trinity Restoration Program		X	X	X	X																					
Upper Sacramento River Fish and Wildlife Habitat Restoration Study *		X	X	X	X	X											X	X								
Upper Sacramento River Fisheries and Riparian Habitat Management Plan			X	X	X												X									
U.S. Fish and Wildlife Service San Francisco Bay Program *	X					X	X																			
Wetlands Reserve Program *							X																			
Wildlife Conservation Board *		X	X	X	X	X	X										X									
Winter-Run Chinook Salmon Recovery Plan		X	X	X	X	X		X				X	X	X	X								X			
Woodbridge Ecological Reserve *								X	X																	
Yolo Basin Wetlands Project *						X	X																			
Yolo County Habitat Conservation Plan *	X	X	X	X	X	X																				
Yuba River, Daguerre Point Dam														X												

# WATER SUPPLY PREDICTABILITY

Program / Projects	Ease institutional obstacles to facilitate water transfers	Improve procedures for water-transferring permitting	Coordinate diversion and conveyance of water transfers	Establish a water-transfer brokering mechanism or institution	Manage water resources data and information in the Bay-Delta sy	Encourage long-term drought contingency planning	Improve water use efficiency
AB 3030 *	X						
American Basin Conjunctive Use Project			X			X	
California Irrigation Management Information System *					X		X
Delta Wetlands Project *			X	X			
Department of Water Resources Water Conservation Branch *							X
Interim South Delta Water Management			X			X	
Low Interest Water Conservation Loan Program *							X
Model Urban Landscape Ordinance, California Code, Chapter 7 (AB 325) *							X
Reclaimed Water: Nonpotable Uses, California Water Code, Chapter 533 *							X
Reclaimed Water: Toilet Flushing, California Water Code, Chapter 723 *							X



# WATER SUPPLY PREDICTABILITY

Program / Projects							
	Ease institutional obstacles to facilitate water transfers	Improve procedures for water-transferring permitting	Coordinate diversion and conveyance of water transfers	Establish a water-transfer brokering mechanism or institution	Manage water resources data and information in the Bay-Delta sy	Encourage long-term drought contingency planning	Improve water use efficiency
Sanitary Districts: Water Reclamation, California Code, Chapter 306 *							X
Sacramento Valley Conjunctive Use Program *							X
San Joaquin Valley Conjunctive Use Program *							X
Senate Bill 900: Water Resources and Delta Restoration Act of 1996			X			X	X
Special Legislation *			X				X
State Water Project Planning Strategy			X				
Agricultural Water Management Planning Act, Water Code Section 10800 *							X
Agricultural Water Suppliers Efficient Management Practices Act *							X
Water Code Section 10900							
Urban Best Management Practices Memorandum of Understanding *						X	X

# WATER SUPPLY PREDICTABILITY

Program / Projects		
Urban Water Management Plans, California Water Code, Chapter 938 *		Ease institutional obstacles to facilitate water transfers
		Improve procedures for water-transferring permitting
		Coordinate diversion and conveyance of water transfers
		Establish a water-transfer brokering mechanism or institution
		Manage water resources data and information in the Bay-Delta sy
	X	Encourage long-term drought contingency planning
Water Recycling Act of 1991, California Water Code, Chapter 187 *	X	Improve water use efficiency

3 \* are on-going projects.

# SYSTEM RELIABILITY

Federal Flood Control Project	Programs / Projects	
	Delta Flood Protection Act	
	X	Monitor, Evaluate, Maintain, and Stabilize existing levees
		Modify agricultural practices to reduce subsidence
		Investigate techniques for beneficial reuse of dredged material
	X	Establish an emergency levee management plan
X	X	Provide funding for maintenance and stabilization

# **APPENDIX B**

## **Related Programs and Associated Funding Sources**

"Programs Related to Improving and Protecting the Bay-Delta System," may not include specific references to the many on-going agency efforts in the Estuary. Programs that are not found in the document itself may be found in Appendix B. Appendix B includes programs that are funded as part of broader programs and therefore are not described individually.

Programs that are not addressed this document, but are mentioned in Appendix B include:

**USBR's Energy and Water Fund**

ACID Improvements  
CVPIA Restoration Fund  
GCID Screening Program  
Georgiana Slough Acoustic Barrier  
RD 108 / 1004 Fish Screen  
Red Bluff Diversion Dam  
San Joaquin Basin Action Plan  
Shasta Temperature Control Device  
Winter-Run chinook Salmon Captive  
Breeding Program

**Department of the Interior's Restoration Fund**

Battle Creek Restoration Program  
CVPIA Restoration Fund  
CVPIA Comprehensive Assessment and  
Monitoring Plan  
CVPIA Water acquisition Program  
Contra Costa Rock Slough Fish Screens  
Durham Mutual Fish Screen  
Parrot Phelan Fish Screen  
Red Bluff Diversion Dam  
San Joaquin Basin Action Plan  
Shasta Temperature Control Device  
Western Canal Siphon

**US Environmental Protection Agency**

Colusa Basin Drain Watershed Project  
Napa River Watershed Management  
Parrot Phelan Fish Restoration and Farming  
San Francisco Estuary Project Boater  
Education Program  
Sonoma Creek Watershed Enhancement  
Plan  
Sacramento County Habitat Conservation  
Plan  
USEPA Bay-Delta Regional Initiative  
Biologically Integrated Orchard System  
Sacramento County Toxics Monitoring  
Dixon Project for Pesticide Use Reduction

Implementation of a TMDL for San Joaquin  
River/Mud and Salt Sloughs  
Grasslands Water Quality Economic  
Incentives Program  
Big Chico Creek Water Quality  
Management Plan  
Iron Mountain Oversight  
Sonoma Creek Vineyard Management  
Protection Project

**Four Pumps Agreement**

Deer Creek Water Exchange  
Grizzly Island Fish Screen  
San Joaquin River Hills Ferry Barrier  
Tuolumne River Restoration at Ruddy Site

**USACE**

Napa River Salt Marsh Restoration  
Sacramento River Restoration at GCID  
Sacramento River Fish River Migration  
General Investigation  
Western Delta Islands General Investigation

**Category III**

Battle Creek Restoration Program  
Biologically Integrated Orchard System  
Parrot Phelan Fish Screen  
Sacramento Levee Berm Habitat Restoration  
Project  
Western Canal Siphon  
Winter-Run Chinook Salmon Captive  
Breeding Program

**Central Valley Regional Water Quality Control  
Board**

Big Chico Creek Water Quality  
Management Plan  
Biologically Integrated Orchard System  
Colusa Basin Drain Watershed Project  
Penn Mine Cleanup

**Tracy Fish Agreement**

Grizzly Island Fish Screen  
San Joaquin Basin Predator Isolation

**Department of Fish And Game, Proposition 70**

Grizzly Island Fish Screen  
Mill Creek Spawning Habitat Restoration  
Ward Dam Passage Project

**San Francisco Water Quality Control Board**

San Francisco Estuary Project Boater  
Education Program  
Sonoma Creek Watershed Enhancement  
Plan  
Sonoma Creek Vineyard Management  
Protection Project

**Wildlife Conservation Board**

Sacramento River Levee Berm Habitat  
Restoration Program  
Tuolumne River Bank Stabilization Program

# DRAFT

## Funding and Costs for Related Programs and Projects

Program / Projects	Funding Agency	Funding Source	Monies	Comments
ACID Improvements	USBR	Energy & Water	\$3,000	FY 95
			\$200,000	FY 96
			\$100,000	FY 97
Battle Creek Restoration Program	Interior	Restoration Fund	\$500,000	1995 Project
	Stakeholders	Category III	\$500,000	1995 Project
Bay Area Wetlands Planning Group	State of California/EPA		\$80,000	1996 FY
Cache Creek and Putah Creek Corridor Restoration Plan	USACE		\$350,000	FY 95
			\$170,000	FY 96
			\$250,000	FY 97
	EPA/CV/RWQCB	CWA 205(j)	\$114,000	95 FY
			\$4,800,000	Project Cost
California Waterfowl Association	Private funding & Donations		N/A	
California Wetland Riparian Geographic Information System Project				
California-Oregon Transmission Project Waterfowl Mitigation Plan			\$9,200	Annual Funding
			\$2,000,000	One time expenditure
Category III Program			\$60,000,000	Annual Funding
Central Valley Habitat Joint Venture	Interior	Restoration Fund	\$1,200,000	FY 96
			\$500,000	FY 97
			\$9,700,000	One time expenditure
Central Valley Project Improvement Act Restoration Fund	Interior		~\$30,000,000 to \$45,000,000 Annual funding	
Central Valley Project Improvement Act	Interior	Restoration Fund	\$809,000	FY 95
Anadromous Fish Restoration Program			\$3,512,000	FY 96
			\$8,000,000	FY 97
Central Valley Project Improvement Act	USBR	Energy & Water	\$1,089,000	FY 95
			\$7,161,000	FY 96
			\$3,000,000	FY 97
Central Valley Project Improvement Act	Interior	Restoration Fund	\$2,000,000	FY 97

Program / Projects	Funding Agency	Funding Source	Monies	Comments
Central Valley Project Improvement Act Comprehensive Assessment/Monitoring Program	Interior	Restoration Fund	\$374,000	FY 95
			\$1,875,000	FY 96
			\$2,312,000	FY 97
Central Valley Project Improvement Act Water Acquisition Program	USBR	Energy & Water	\$1,737,000	FY 97
	Interior	Restoration Fund	\$4,551,000	FY 95
			\$21,953,000	FY 96
			\$6,275,000	FY 97
Coastal Conservancy		Bonds	\$20,000,000	Annual Funding
		Habitat Conservation Fund	\$4,000,000	Annual Funding
Colusa Basin Drain Watershed Project	EPA/CVRWQCB	CWA 319(h)	\$300,000	FY 95
Commercial Ocean Fishing Regulation	N/A			
Commercial Salmon Stamp Account			\$340,000 to \$1,000,000	Annual Funding
Contra Costa Rock Slough Fish Screen	Interior	Restoration Fund	\$80,000	FY 96
			\$250,000	FY 97
Corps of Engineers Little Holland Tract and Liberty Island Reconnaissance Investigation	USACE		\$189,000	FY 95
			\$216,000	FY 96
			\$150,000	FY 97
			\$1,500,000	One Time Expenditure
Cosumnes River Preserve			\$225,000	Annual Funding
			\$14,000,000	One time expenditure
Deer Creek Water Exchange	DFG/DWR	Four Pumps	\$2,500,000	CY 96
Delta Native Fishes Recovery Team	N/A			
Delta Protection Commission		Environmental License Plate Fund, Water Fund, Boating Fund	\$250,000	96 FY
Delta Pumping Plant Fish Protection Agreement or Four Pumps Agreement	DWR	State Water Project Contractors	~\$2,000,000	Annual Funding
			\$15,000,000	Initial one-time only funding

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Program / Projects	Funding Agency	Funding Source	Monies	Comments
Department of Fish and Game Delta/Bay Enhanced Enforcement Program	USBR/DFG	Tracy Fish Agreement	\$400,000	CY 95
	DFG/DWR	Four Pumps Agreement	\$200,000	CY 96
Department of Fish and Game Fish Screening and Fish Passage Coordination Project	DFG	Sport Fish Restoration monies, Bond Propositions, Striped Bass Stamp Fund		
Department of Fish and Game Screen Shops	DFG	Sport Fish Restoration, FG Preservation Fund, Prop 99, ELPF	\$999,500	CY 95
			\$1,049,500	CY 96
Department of Fish and Game Mitigation Issue Team	DFG	None		
Department of Water Resources' Western Delta Program			\$30,000,000	One Time Expenditure
Ducks Unlimited VALLEY CARE Program				
Durham Mutual Fish Screen and Ladder	Interior	Restoration Fund	\$316,500	1995 Project
	Stakeholders	Category III	\$316,500	1995 Project
Fall Head of Old River Barrier		DWR, USBR	\$108,000	Annual Funding
GCID Screening Program	USBR	Energy & Water	\$801,000	FY 95
			\$3,000,000	FY 96
			\$4,300,000	FY 97
Georgianna Slough Acoustic Barrier	USBR	Energy & Water	\$350,000	FY 95
Governor's California Wetland Conservation Policy		EPA	\$80,000	95/96 FY
Grizzly Slough Wildlife Area	DWR	Agricultural Leases, Conservation Agreements		
Grizzly Island Fish Screen	DWR/DFG	Four Pumps	\$227,000	CY 95
	USBR/DFG	Tracy Fish Agreement	\$250,000	CY 95
	DFG	Prop 70	\$105,000	CY 95
Inland Wetlands Conservation Program		Wildlife Conservation Board		

Program / Projects	Funding Agency	Funding Source	Monies	Comments
Interagency Ecological Program	USBR	Energy & Water	\$3,000,000	FY 96
			\$3,500,000	FY 97
	DWR		\$6,000,000	Annual Funding
	USGS		\$966,000	Annual Funding
	USFWS		\$220,000	Annual Funding
	DFG		\$1,345,000	Annual Funding
	CVPIA		\$100,000	Annual Funding
	Contra Costa Water District		\$35,000	Annual Funding
Introduced Aquatic Plant Species Control		Department of Boating and Waterways		
		Department of Food and Agriculture		
		DFG		
		DWR		
Introduced Aquatic Species Control		Department of Food and Agriculture		
		DFG		
		DWR		
Iron Canyon Fish Ladder on Big Chico Ck	DFG	Salmon Stamp	\$48,500	CY 96
Keswick Spawning Gravel Project	Interior	Restoration Fund	\$39,400	1995 Project
	Stakeholders	Category III	\$0	Approved funds to back up CVPIA
	DFG	Salmon Stamp	\$13,100	1995 Project
	USBR	Energy & Water	\$652,000	FY 95
Keswick Stilling Basin	EPA	CWA	\$160,000	95 FY
LTMS Assistance	Stakeholders	Category III	\$1,550,000	1995 Project
M&T Pump Relocation Project	Interior	Restoration Fund	\$2,170,000	
	WCB		\$500,000	
	Ducks Unlimited		\$150,000	
	USFWS		\$150,000	
Medford Island Multi-Species Protection and Enhancement Project		Private Donations		
Merced River Predatory Isolation Project	DFG/DWR	Four Pumps	\$325,000	CY 96
Merced River Gravel Restoration	DFG/DWR	Four Pumps	\$60,000	CY 95
			\$40,000	CY 96

Program / Projects	Funding Agency	Funding Source	Monies	Comments
Mill Creek Spawning Habitat Restoration	DFG	Prop 70	\$15,000	CY 95
Montezuma Wetlands Project		Private Investments		
National Estuarine Reserve Research System		NOAA		
Napa River Salt Marsh Restoration General Investigation	USACE		\$148,000	FY 96
			\$377,000	FY 97
Napa River Watershed Management	EPA/SFRWQCB	CWA 319(h)	\$252,000	FY 95
North Bay Initiative		EPA 104(b)(3)		
North Bay Wetlands Protection Program	EPA	CWA	\$53,000	95 FY
	EPA	State Wetland Development Grant		
		State of California (match)		
Northern California Streams Sacramento River Fish Migration	Corps	1135	\$550,000	FY 95
			\$75,000	FY 96
			\$300,000	FY 97
Parrot Phelan Fish Screen	WCB		\$318,000	1995 Project
	Stakeholders	Category III	\$0	Approved backup funds for CVPIA
	Interior	Restoration Fund	\$100,000	1995 Project
Partnership for the San Pablo Baylands		SFBRWQCB	\$500,000	One time expenditure
Phelan Island Restoration and Farming	EPA		\$265,900	FY 96
Port of Sacramento Mitigation Bank		None		
Prospect Island Fish and Wildlife Habitat Restoration Project	USACE	1135	\$250,000	FY 96
	USBR	Restoration Fund	\$1,633,000	95 FY
	Category III		\$2,500,000	1996 Project
	USBR	Energy & Water	\$1,228,000	95FY
Putah Creek, South Fork Preserve	EPA/CVRWQC	CWA 205(J)	\$114,000	95 FY
RD 108/1004 Fish Screens	USBR	Energy & Water	\$665,000	FY 95
			\$865,000	FY 96
Red Bluff Diversion Dam	USBR	Energy & Water	\$2,013,000	FY 95
			\$1,500,000	FY 96
			\$2,000,000	FY 97
	Interior	Restoration Fund	\$1,935,000	FY 95
Resources Agency Conservation Banking Policy				

Program / Projects	Funding Agency	Funding Source	Monies	Comments
Riparian Habitat Joint Venture		None		
Sacramento County Habitat Conservation Plan	EPA	CWA	\$100,000	FY 95
			\$250,000	FY 96
Sacramento River Levee Berm Habitat Restoration Project	WCB		\$140,000	1995 Project
	Stakeholders	Category III	\$400,000	1995 Project
	Ducks Unlimited		\$20,000	1995 Project
Sacramento River Restoration at GCID	USACE		\$2,593,000	FY95
			\$300,000	FY 96
			\$2,000,000	FY 97
Sacramento River Fish Migration General Investigation	USACE		\$550,000	FY 95
			\$75,000	FY 96
			\$300,000	FY 97
Sacramento Spring-run Chinook Salmon Effort		N/A		
Sacramento-San Joaquin Delta Special Study	DWR	DWR & Corps	\$5,743,000	One time expenditure
Salmon and Steelhead Hatchery Program in the Central Valley	DWR			
	DFG			
	USBR			
	EBMUD			
Salmon and Steelhead Management and Restoration Program	DFG	22 Funding Sources		
San Francisco Bay Joint Venture				
San Francisco Bay National Wildlife Refuge				
San Francisco Bay Regional Ecosystem Habitat Goals				
San Francisco Estuary Project	EPA	CWA	\$406,000	FY 95
	EPA	CWA	\$410,000	FY 96
	SWRCB		\$100,000	96 FY

Program / Projects	Funding Agency	Funding Source	Monies	Comments
San Francisco Estuary Project Boater Education Program	EPA	Clean Vessel Act	\$73,000	FY 95
		Clean Vessel Act	\$50,000	96 FY
	SFRWQCB/ABAG		\$25,000	FY 95
	SFRWQCB		\$10,000	FY 96
San Joaquin County Multi-Species Habitat Conservation and Open Space Plan	DFG	Mitigation fees and grant funds		
San Joaquin Basin Predator Isolation	DFG/USBR	Tracy Fish Agreement	\$310,000	CY 96
San Joaquin Basin Action Plan	USBR	Energy & Water	\$1,000,000	FY 97
	Interior	Restoration Fund	\$287,000	FY 95
			\$1,473,000	FY 96
			\$1,000,000	FY 97
San Joaquin River Hills Ferry Barrier	DFG/DWR	Four Pumps	\$42,000	CY 95
			\$45,000	CY 96
San Joaquin River Management Program	DWR			
Shasta Temperature Control Device	USBR	Energy & Water	\$17,905,000	FY 95
	Interior	Restoration Fund	\$10,176,000	FY 95
	USBR	Energy & Water	\$21,109,000	FY 96
	Interior	Restoration Fund	\$16,961,000	FY 96
Sonoma Creek Watershed Enhancement Plan	EPA/SFRWQCB	CWA 205(j)	\$100,000	FY 95
Stone Lakes National Wildlife Refuge			\$3,470,000	FY 97
Striped Bass Stamp Account			\$1,007,000	96 FY, Program is now expired.
Striped Bass Management Project				
Suisun Marsh Diversion Screening Program		USBR/DFG	\$2,000,000	96 FY
	USBR	Energy & Water	\$249,000	FY 95
			\$300,000	FY 96
			\$1,000,000	FY 97
		Cat III	\$450,000	1995 Project
Suisun Marsh Preservation Agreement				
Tidal Wetlands Species Recovery Plan				
Tracy Fish Agreement	USBR	Energy & Water	\$1,270,000	96 FY
			\$2,700,000	Initial appropriation
Trinity Restoration Program	USBR	Energy & Water	\$5,000,000	Annual for 10 years
	USBR	Energy & Water	\$20,000,000	For 1996 through 1999
Tuolumne River Restoration at Ruddy Site	DFG/DWR	Four Pumps	\$40,000	CY 95

Program / Projects	Funding Agency	Funding Source	Monies	Comments
Tuolumne River Bank Stabilization Project	WCB		\$47,300	CY 95
Upper Sacramento River Fish and Wildlife Habitat Restoration Study	1135		\$4,800,000	For Golden State Island Restoration
		Corps	\$3,600,000	75% of total cost
		Non Federal Interests	\$1,200,000	25% of total cost
		State	\$6,000,000	To implement Restoration
		Cat III	\$650,000	Has been proposed
Upper Sacramento River Fisheries and Riparian Habitat Management Plan		Environmental License Fund		Need to complete documentation before securing funding.
		Wildlife Conservation Board		
U.S. Environmental Protection Agency Bay Delta Regional Initiative	EPA			Regional initiative funding is appropriated annually and amount varies.
U.S. Fish and Wildlife Service San Francisco Bay Program	USFWS		\$250,000	Annual appropriation to fund estuarine restoration projects.
Ward Dam Passage Project	DFG	Prop 70	\$15,000	CY 95
Western Canal Siphon	Stakeholders	Category III	\$2,739,000	1996 Project
	Interior	CVPIA	\$2,739,000	1996 Project
	Western Canal Co.		\$2,739,000	1996 Project
Western Delta Islands General Investigation	USACE		\$626,000	FY 95.
			\$172,000	FY 96
			\$400,000	FY 97
Wetlands Reserve Program		Federal Government		Pays 75% of the restoration costs, long-term maintenance and repair
		Landowner		Pays 25%
Wildlife Conservation Board (WCB)		Environmental License Plate Fund		
		Public Resource account		
		Wildlife Restoration Fund		
		Proposition 19		
		Fish & Wildlife Habitat Enhancement Bond Act of 1984		

Program / Projects	Funding Agency	Funding Source	Monies	Comments
WCB continued		Proposition 70		
		California Wildlife		
		Coastal and Park land Conservation Fund		
		Proposition 99		
		Cigarette and Tobacco Products Surtax fund		
		Wildlife Conservation Board	\$3,400,000	
Winter-Run Chinook Salmon Captive Breeding Program	USBR	Energy & Water	\$400,000	FY 95
			\$300,000	FY 96
	DWR		\$125,000	
	Stakeholders	Category III	\$300,000	1995 Project
Winter-Run Chinook Salmon Recovery Plan				
Woodbridge Ecological Reserve	DFG	Endangered Species License Fund		Future funding is uncertain
Yolo Basin Wetlands Project	USACE	1135	\$5,970,000	FY 95
			\$5,920,000	FY 96
			\$970,000	FY 97
Yolo County Habitat Conservation Plan	DFG	Mitigation fees		
Yuba River, Daguerre Point Dam		1135	\$4,700,000	\$3.5 million from the Federal government
SYSTEM RELIABILITY				
Delta Flood Protection Act		Delta Protection Fund	\$6,000,000	Annual funding
Federal Flood Control Project	N/A			
Senate Bill 1065	DWR			
WATER SUPPLY				
AB 3030, Ground Water Management	N/A			
American Basin Conjunctive Use Project	SWP			Funding for the feasibility project
California Irrigation Management Information System		Local cooperators		Purchase new stations
California Water Code	N/A			

Program / Projects	Funding Agency	Funding Source	Monies	Comments
Delta Wetland Project		Private sector financing		
Department of Water Resources' Water Conservation Branch	DWR	Water Conservation Office	\$2,983,000	
Interim South Delta Program	State Water Project		\$2,310,000	95/96 FY
Low Interest Water Conservation Loan Program		Water Conservation Bond Law of 1988	\$60,000,000	
		Water Conservation and Water Quality Bond of 1986	\$75,000,000	
		Clean Water Bond Law of 1984	\$10,500,000	
Model Urban Landscape Ordinance, California Code, Chapter 7 (AB 325)	Water Conservation Office	Urban Water Conservation	\$1,206,000	
		Leak Detection	\$106,000	
		Landscape	\$281,000	
		Water Management Planning	\$401,000	
		Conservation Information	\$185,000	
		Commercial Industrial	\$233,000	
Reclaimed Water Nonpotable Uses, California Code, Chapter 723 (AB 1698)	Water Conservation Branch		\$2,983,000	
Reclaimed Water: Toilet Flushing, California Code, Chapter 723 (AB 174)	Water Conservation Branch		\$2,983,000	
Sanitary Districts: Water Reclamation, California Code, Chapter 306 (AB 1015)	Water Conservation Branch		\$2,983,000	
Sacramento Valley Conjunctive Use Program	SWP		\$1,800,000	95/96 FY
			\$2,300,000	96/97 FY
San Joaquin Valley Conjunctive Use Program	None			
Senate Bill 900: Water Resources and Delta Restoration Act			\$500,000,000	Unspecified amount, approximate numbers only
State Water Project Planning Strategy	SWP			
Special Legislation	N/A			



<b>Program / Projects</b>	<b>Funding Agency</b>	<b>Funding Source</b>	<b>Monies</b>	<b>Comments</b>
The Agricultural Water Management Planning Act, Water Code Section 10800	Water Conservation Office		\$2,983,000	
		Agricultural Water Conservation	\$1,777,000	
The Agricultural Water Suppliers Efficient Management Practices Act Water Code Section 10900	Water Conservation Office		\$2,983,000	
		Agricultural Water Conservation	\$1,777,000	
		CIMIS	\$669,000	
		Mobile Lab	\$100,000	
		Flexible Water Delivery	\$189,000	
		Conservation Information	\$154,000	
		Drainage Source Control	\$665,000	
Urban Best Management Practices Memorandum of Understanding	Water Conservation Office	Urban Water Conservation	\$1,206,000	
		Leak Detection	\$106,000	
		Landscape	\$281,000	
		Water Management Planning	\$401,000	
		Conservation Information	\$185,000	
		Commercial Industrial	\$233,000	
Urban Water Management Planning Act, California Water Code, Section 10610 et seq.	Water Conservation Office	Urban Water Conservation	\$1,206,000	
		Leak Detection	\$106,000	
		Landscape	\$281,000	
		Water Management Planning	\$401,000	
		Conservation Information	\$185,000	
		Commercial Industrial	\$233,000	

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Program / Projects	Funding Agency	Funding Source	Monies	Comments
Water Recycling Act of 1991, California Code, Chapter 187 (AB 673)	Water Conservation Office		\$2,983,000	
<b>WATER QUALITY</b>				
Bay Area Pilot Project	State of California			
	USEPA			
Corps of Engineers, Stockton Turning Basin Bubbler	Federal Funds			Paid for initial construction
	USACE			Paying for operation and management
Department of Water Resources' Drainage Programs	DWR	N/A		
Long Term Management Strategy (LTMS)	Corps			
	USEPA		\$160,000	FY 95
	State of California			
San Francisco Bay Regional Water Quality Control Board and San Francisco Bay Conservation and Development Commission/Regional Wetlands Management Plan	State of California			
	USEPA			
San Francisco Bay Regional Water Quality Control Board and San Francisco Bay Conservation and Development Commission/Basin Plan	USEPA			
San Joaquin Valley Drainage Implementation Program	None			Does not have its own funding or central staff
Biologically Integrated Orchard Systems (BIOS)	Stakeholders	Category III	\$660,000	
	EPA/CVRWQCB	CWA	\$318,000	FY 95
Sacramento County Toxics Monitoring Program	EPA	CWA 104(b)(3)	\$497,000	FY 95
			~ \$1,000,000	FY 96
Dixon Project for Pesticides Use Reduction	EPA	CWA	\$50,000	FY 95
Implementation of a TMDL for San Joaquin River/Mud and Salt Sloughs	EPA	CWA 319(h)	\$218,000	FY 95
Grasslands Water Quality Economic Incentives Program	EPA	CWA	\$255,000	FY 96
Big Chico Creek Water Quality Management Plan	EPA/CVRWQCB	CWA 205(j)	\$40,000	FY 95
Iron Mountain Mine Oversight	EPA	Superfund	\$800,000	FY 95
Penn Mine Cleanup	CVRWQCB	Cleanup and Abatement Account	\$5,125,000	FY 95

<b>Program / Projects</b>	<b>Funding Agency</b>	<b>Funding Source</b>	<b>Monies</b>	<b>Comments</b>
Sonoma Creek Vineyard Management Protection Project	EPA/SFRWQCB	CWA 319(h)	\$156,000	FY 95

# APPENDIX C

## Abbreviations and Acronyms

## Abbreviations and Acronyms

<b>AF</b>	Acre Foot
<b>AFRP</b>	Central Valley Project Improvement Act Anadromous Fish Restoration Program
<b>AFSP</b>	Central Valley Project Improvement Act Anadromous Fish Screen Program
<b>BAWPG</b>	Bay Area Wetlands Planning Group
<b>BCDC</b>	San Francisco Bay Conservation and Development Commission
<b>BOD</b>	Biochemical Oxygen Demand
<b>Cal/EPA</b>	California State Environmental Protection Agency
<b>CCCRP</b>	Cache Creek Corridor Restoration Plan
<b>CIMIS</b>	California Irrigation Management Information System
<b>COE</b>	U.S. Army Corps of Engineers
<b>CRP</b>	Cosumnes River Preserve
<b>COTP</b>	California-Oregon Transmission Project Waterfowl Mitigation Plan
<b>CUWA/AG</b>	California Urban Water Agency/ Agricultural Water Users
<b>CVP</b>	Central Valley Project
<b>CVPIA</b>	Central Valley Project Improvement Act Fish & Wildlife Restoration
<b>CWA</b>	California Waterfowl Association
<b>DBEEP</b>	Department of Fish and Game Delta/Bay Enhanced Enforcement Program
<b>DFA</b>	Department of Food and Agriculture
<b>DFG</b>	California Department of Fish and Game
<b>DMIT</b>	Department of Fish and Game Mitigation Issue Team
<b>DNFRT</b>	Delta Native Fishes Recovery Team
<b>DO</b>	Dissolved Oxygen
<b>DPC</b>	Delta Protection Commission
<b>DU</b>	Ducks Unlimited
<b>DWP</b>	Delta Wetlands Project
<b>DWR</b>	Department of Water Resources
<b>IEP</b>	Interagency Ecological Program
<b>ISDP</b>	Interim South Delta Program
<b>IWCP</b>	Inland Wetlands Conservation Program
<b>LTMS</b>	Long Term Management Strategy
<b>MAF</b>	Million Acre Feet
<b>MOU</b>	Memorandum of Understanding
<b>N/A</b>	Not Available
<b>NAWMP</b>	North American Waterfowl Management Plan
<b>NBWPP</b>	North Bay Wetlands Protection Program
<b>NERRS</b>	National Estuarine Reserve Research System
<b>RHJV</b>	Riparian Habitat Joint Venture
<b>SBMP</b>	Striped Bass Management Project
<b>SBP</b>	Sonoma Baylands Project

<b>SFBJV</b>	San Francisco Bay Joint Venture
<b>SFBRWQCB</b>	San Francisco Bay Regional Water Quality Control Board
<b>SFEI</b>	San Francisco Estuary Institute
<b>SFEP</b>	San Francisco Estuary Project
<b>SJRMP</b>	San Joaquin River Management Program
<b>SMPA</b>	Suisun Marsh Preservation Agreement
<b>SRA</b>	Shaded Riverine Aquatic Habitat
<b>SWP</b>	State Water Project
<b>SWRCB</b>	State Water Resources Control Board
<b>TNC</b>	The Nature Conservancy
<b>TPP</b>	Tracy Pumping Plant
<b>USBR</b>	U.S. Bureau of Reclamation
<b>USACE</b>	U.S. Army Corps of Engineers
<b>USDA</b>	U.S. Department of Agriculture
<b>USEPA</b>	U.S. Environmental Protection Agency
<b>USFWS</b>	U.S. Fish and Wildlife Service
<b>WRP</b>	Wetlands Reserve Program